92-2052

No. _____

Supreme Court, U.S.
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IN THE SUPREME COURT OF THE UNITED STATES
October Term, 1993

CENTRAL ARIZONA WATER CONSERVATION DISTRICT, CENTRAL ARIZONA IRRIGATION AND DRAINAGE DISTRICT, MARICOPA-STANFIELD IRRIGATION & DRAINAGE DISTRICT, and NEW MAGMA IRRIGATION & DRAINAGE DISTRICT, Arizona Municipal corporations,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

APPENDIX TO CENTRAL ARIZONA WATER CONSERVATION DISTRICT'S PETITION FOR WRIT OF CERTIORARI

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FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

CENTRAL ARIZONA WATER CONSERVATION DISTRICT, CENTRAL ARIZONA IRRIGATION AND DRAINAGE DISTRICT, MARICOPA-STANFIELD IRRIGATION & DRAINAGE DISTRICT, NEW MAGMA IRRIGATION & DRAINAGE DISTRICT, AND HARQUAHALA VALLEY IRRIGATION DISTRICT,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,

Respondent,

SALT RIVER PROJECT AND POWER DISTRICT, GRAND CANYON TRUST, AND THE WILDERNESS SOCIETY,

Respondents-Intervenors.

No. 91-70731

OPINION

Appeal from the United States
Environmental Protection Agency

Argued and Submitted
January 13, 1993—San Francisco, California

Filed March 25, 1993

Before: Ruggero J. Aldisert,* Alfred T. Goodwin, and Betty B. Fletcher, Circuit Judges.

*Honorable Ruggero J. Aldisert, Senior United States Circuit Judge for the Third Circuit, sitting by designation.

SUMMARY

Environmental Law/Air

The court of appeals denied a petition for review of a Final Rule issued by the Environmental Protection Agency. The court held that, pursuant to Clean Air Act requirements to reduce visibility impairments around national parks, imposition by the EPA of emissions reduction requirements on a power facility in proximity to the Grand Canyon were not arbitrary and capricious or in excess of regulatory authority, when the regulations were based on reasonable interpretations of equivocal evidence.

Petitioner Central Arizona Water Conservation District obtains electricity to pump its water from the Navajo Generating Station, which is within twelve miles of the Grand Canyon. Respondent United States Environmental Protection Agency, pursuant to the goal of the Clean Air Act to remedy visibility impairment in specified areas, including the national parks, required a 90 percent reduction in certain emissions from Navajo. Navajo is owned in part by the Bureau of Reclamation, with which the District has a contractual relationship requiring it to repay most of the Bureau's share of the costs of the required emission controls.

The Act requires EPA to promulgate regulations to assure reasonable progress toward the goal. Following an extended process, which included a tracing study conducted by the National Park Service, which enabled emissions from Navajo to be identified in the ambient air; an evaluation of that study by the National Academy of Sciences, which both acknowledged the difficulty of determining the exact contribution to Grand Canyon haze reasonably attributable to Navajo, and

noted that the EPA was not statutorily required to show such a precise relationship; and a monitoring study sponsored by Navajo's operator, which concluded that emission controls at Navajo would produce at most a 2 percent improvement in average visibility, EPA proposed a 70 percent average reduction in the Navajo emissions. After a public comment period and consultations with Navajo, environmental groups, including the Environmental Defense Fund and the Grand Canyon Trust, and the State of Arizona, EPA issued a final determination concluding that Navajo was a dominant contributor to visibility impairment, and that emissions reduction by 90 percent would more adequately represent reasonable progress toward the visibility goal than the approach originally suggested by EPA.

The District contended that EPA's Final Rule exceeded the scope of its regulatory authority, and that its action was arbitrary and capricious. In turn, EPA contended that the District lacked standing to challenge its ruling.

[1] The District had standing to litigate this issue. The Final Rule would likely cause it *some amount* of economic harm, given its contractual relationship with the Bureau of Reclamation. [2] The Final Rule was the direct cause of that harm, notwithstanding the involvement of a third party and a contractual relationship, and that harm was likely to be redressed by a favorable decision. [3] The District's interest was within the zone protected by the Act, since having to pay the costs of compliance could not be said to be marginally related to or inconsistent with the purposes of the Act.

[4] EPA had statutory authority to regulate the contribution to visibility impairment reasonably attributable to Navajo, notwithstanding that it might only be a fraction of the total problem. [5] EPA had broad discretion in determining if impairment was reasonably attributable to a specific source. [6] The record reflected adequate technical and scientific support for EPA's conclusion that impairment was reasonably

attributable to Navajo. Its choice represented reasonable accommodation of conflicting policies committed to its care by the Act, and was therefore entitled to deference from a reviewing court.

[7] EPA relied on Congressional direction to assure reasonable progress toward the national goal as its statutory authority for promulgating its regulations. [8] Reliance on the reasonable progress provisions was a permissible construction of the statute, since reasonable progress was the overarching requirement to be addressed. [9] The Final Rule was the product of reasoned decisionmaking. EPA adequately considered relevant factors in its process. As long as its interpretation was reasonable, a reviewing court may not substitute its own judgment for the agency's. Deference to EPA's judgment was appropriate because the agency was making predictions within its special expertise at the frontiers of science. [10] The limits of the Park Service's study were acknowledged, and EPA's decision was adequately supported by substantial scientific evidence. Its decision was based on reasonable extrapolations from some reliable evidence.

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OPINION

GOODWIN, Circuit Judge:

Petitioners Central Arizona Water Conservation District ("CAWCD") and four irrigation districts[1] (collectively "Petitioners" or the "Districts") challenge an Environmental Protection Agency ("EPA") Final Rule which requires a 90% reduction in sulfur dioxide (SO_2) emissions at the Navajo Generating Station ("NGS") in order to improve winter average visibility in the Grand Canyon National Park ("Grand Canyon").

Petitioners argue (1) that, because the Final Rule seeks to regulate "regional haze" when EPA has yet to promulgate Phase II implementing regulations addressing regional haze, EPA exceeded the scope of its regulatory authority by issuing the Final Rule, and (2) that the Final Rule constitutes arbitrary and capricious agency action. In addition to responding to Petitioners' substantive criticisms, EPA asserts that Petitioners lack standing to bring this challenge.

The Final Rule was issued by EPA under 42 U.S.C. §§ 7410(c)(1), 7491, and is directly appealable to this court under 42 U.S.C. § 7607(b)(1). Petitioners do have standing to bring this challenge. We hold, however, that EPA acted within its statutory and regulatory authority when it promulgated the Final Rule, and that EPA has not acted arbitrarily and capriciously.

I. BACKGROUND

This case involves regulations promulgated by EPA in an attempt to remedy, at least partially, visibility impairment at

[1]Central Arizona Irrigation and Drainage District, Maricopa-Stanfield Irrigation & Drainage District, New Magma Irrigation & Drainage District, and Harquahala Valley Irrigation District.

the Grand Canyon. In a final rule entitled "Approval and Promulgation of Implementation Plans: Revision of the Visibility FIP for Arizona," 56 Fed. Reg. 50,172 (1991) (codified at 40 C.F.R. § 52) ("Final Rule"), EPA required a 90% reduction in SO_2 emissions at NGS, a power plant situated approximately twelve miles from the Grand Canyon, near Page, Arizona. The Final Rule limits SO_2 emissions from NGS to 0.10 pound per million British thermal units (lb/MMBtu), with an estimated 7% winter average visibility improvement in the Grand Canyon. The estimated cost of the improvement, following an initial capital cost estimated at $430 million, is $89.6 million per year.

The Salt River Project ("SRP"), a respondent-intervenor in this case,[2] is the operating agent of NGS. NGS is jointly owned by SRP, the U.S. Department of Interior, Bureau of Reclamation ("BOR"), Los Angeles Department of Water and Power, Arizona Public Service Co., Nevada Power Co. and Tucson Gas & Electric Co.[3] Petitioners are water districts that obtain electricity to pump their water primarily from NGS. They acknowledge that they are not owners of NGS, but nonetheless claim an economic interest in the Final Rule. CAWCD claims that it will be required, due to its contractual relationship with the BOR, to repay the major portion of the BOR's 24.3% share of the costs of installing and maintaining the emission controls required by the Final Rule.

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[2]It is noteworthy that SRP and the other joint-owners are the parties directly aggrieved by the Final Rule, yet they do not participate in Petitioners' challenge. In fact, SRP argues in support of the Final Rule as a respondent-intervenor.

[3]The joint-owners' percentages of participation is as follows: BOR, 24.3%; SRP, 21.7%; Los Angeles Department of Water and Power, 21.2%; Arizona Public Service Co., 14%; Nevada Power Co., 11.3%; Tucson Gas & Electric Co., 7.5%.

A. *Regulatory Framework*

1. *The Clean Air Act, Visibility Impairment, and the Grand Canyon*

In 1977, Congress substantially amended the Clean Air Act (the "Act"). Included in the 1977 amendments was section 169A, 42 U.S.C. § 7491, which declared "as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." 42 U.S.C. § 7491(a)(1). Congress required EPA to promulgate regulations to assure "reasonable progress toward meeting th[is] national goal." 42 U.S.C. § 7491(a)(4). EPA was further directed to require each state with a class I Federal area to revise its state implementation plan ("SIP") "to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal." 42 U.S.C. § 7491(b)(2). Measures for achieving "reasonable progress" generally include best available retrofit technology ("BART")[4] and a long-term strategy. 42 U.S.C. §§ 7491(b)(2)(A), (B). If an individual state fails to fulfill its obligations under the Act, EPA is directed to take such measures as are required to achieve "reasonable

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[4]The regulations provide the following definition of BART:

> Best Available Retrofit Technology (BART) means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

40 C.F.R. § 51.301(c).

progress" pursuant to a federal implementation plan ("FIP") under section 110(c) of the Act. 42 U.S.C. § 7410(c)(1).

The Act defines class I Federal areas as international parks, national wilderness areas or memorial parks which exceed 5,000 acres in size, and national parks which exceed 6,000 acres in size. 42 U.S.C. § 7472(a). The Grand Canyon has been classified as a class I Federal area. *See* 44 Fed. Reg. 69,122 (1979). Congress recorded its concern with the visibility impairment at the Grand Canyon caused by NGS. *See* H.R. Rep. No. 294, 95th Cong., 1st Sess. 203-04 (1977).

2. *EPA's 1980 Regulations*

In 1980, EPA promulgated visibility regulations under section 169A of the Act. 45 Fed. Reg. 80,084 (1980) (codified at 40 C.F.R. §§ 51.300-.307). The regulations adopted a "phased approach to visibility protection." *Id.* at 80,085. Phase I was directed at controlling visibility impairment "that can be traced to a single existing stationary facility or small group of existing stationary facilities." *Id.* EPA refers to this type of impairment as "reasonably attributable" impairment. 45 Fed. Reg. 34,762, 34,779 (1980) (codified at 40 C.F.R. § 51). EPA deferred addressing other types of impairment such as "regional haze" for future phases due to the heightened complexity and the scientific and technical limitations inherent in attempts to identify, measure, and control such broadscale visibility impairment. *See* 45 Fed. Reg. at 80,086; *see also id.* at 80,085 (defining regional haze as "widespread, regionally homogeneous haze from a multitude of sources which impairs visibility in every direction over a large area").

Generally, EPA's "Phase I" regulations require affected states to coordinate the development of SIPs with the appropriate Federal land managers, to develop programs to assess and remedy visibility impairment from new and existing sources, and to develop a long-term strategy to assure reasonable progress toward section 169A's national visibility goal.

See 40 C.F.R. §§ 51.300-.307. The regulations specifically require states to identify those existing sources "which may reasonably be anticipated to cause or contribute" to any visibility impairment which is "reasonably attributable to that existing stationary facility." 40 C.F.R. § 51.302(c)(4)(i). Once the source is identified, the affected state is required to take such measures as are required to attain "reasonable progress"; such measures generally include determination of emissions limitations for that source under BART and the development of a long-term strategy. 40 C.F.R. §§ 51.302(c)(1), (2).

The regulations define the term "visibility impairment" as "any humanly perceptible change in visibility (visual range, contrast, coloration) from that which would have existed under natural conditions." 40 C.F.R. § 51.301(x). The term "reasonably attributable" is defined as "attributable by visual observation or any other technique the State deems appropriate." 40 C.F.R. § 51.301(s). The states, or EPA under § 7910(c), thus have broad discretion in determining how and whether impairment may be attributed to an individual source. *See* 45 Fed. Reg. at 80,094, 80,085.

B. *Prior Proceedings and the Rulemaking History*

In its implementation of Phase I, EPA required all states containing class I Federal areas to submit revised visibility SIPs within a nine-month period. Arizona was one of thirty-five states failing to submit a revised SIP to EPA. In 1982, the Environmental Defense Fund and other environmental groups brought a citizen suit against EPA to compel performance of the agency's nondiscretionary duty under 42 U.S.C. § 7410(c)(1)(A) to promulgate visibility FIPs when states fail to submit SIPs pursuant to the 1980 regulations. *See EDF v. Reilly*, No. C82-6850-RPA (N.D. Cal. Apr. 20, 1984). The parties reached a settlement agreement which the court approved in an April 20, 1984 consent decree. This consent decree required EPA to review existing SIPs for deficiencies and

allow states to cure those deficiencies. If states remained deficient, the consent decree required EPA to issue visibility FIPs.

The Department of Interior subsequently certified the existence of visibility impairment in all class I Federal areas, and specifically declared NGS as a probable source of impairment at the Grand Canyon. Following this certification, the National Park Service ("Park Service") conducted the Winter Haze Intensive Tracer Experiment ("WHITEX"), a winter visibility attribution study. In part, WHITEX involved the release from NGS of a unique "tracer" gas, CD_4; because CD_4 is not found in the ambient air, its use "fingerprinted" NGS emissions when detected downwind.

In November 1987, EPA disapproved the SIPs of twenty-nine states, including Arizona, for failing to comply with the visibility regulations. *See* 52 Fed. Reg. 45,132, 45,133 (1987) (codified at 40 C.F.R. §§ 52, 81). Over the next few years, EPA further investigated visibility impairment at Grand Canyon and other class I Federal areas. While acting on many of the areas, EPA delayed action on the Grand Canyon to allow the Park Service time to analyze the data obtained from the WHITEX study. The Park Service issued an April 1989 draft report which attributed to NGS 70% of the sulfates in the Grand Canyon during the WHITEX experiment period. *See* William Malm et al., National Park Service Report on the Winter Haze Intensive Tracer Experiment, Draft Final Report (Apr. 7, 1989).

Relying on the Park Service's April 1989 draft report, EPA preliminarily attributed to NGS several episodes of wintertime visibility impairment at the Grand Canyon. *See* 54 Fed. Reg. 36,948, 36,951 (1989) (codified at 40 C.F.R. § 52). EPA solicited public comment on the merits of its preliminary attribution finding, and began the informal rulemaking process to determine the appropriate action to be taken. *Id.* In December 1989, the Park Service issued its final report on WHITEX. *See* William Malm et al., National Park Service Report on the

Winter Haze Intensive Tracer Experiment, Final Report (Dec. 4, 1989).

SRP and others, including Petitioners, submitted comments severely criticizing the analyses, methodologies, and conclusions of the Park Service's reports. In response to the concerns raised about the Park Service's analysis of the WHITEX data, the National Research Council of the National Academy of Sciences ("NAS") was asked to evaluate the Park Service's WHITEX report and the other scientific evidence relevant to EPA's preliminary attribution. In its October 1990 report, the NAS confirmed that "at some times during the study period, NGS contributed significantly to haze" in the Grand Canyon. National Research Council, *Haze in the Grand Canyon: An Evaluation of the Winter Haze Intensive Tracer Experiment* 3, 37 (1990) [hereinafter *Haze in the Grand Canyon*]. NAS cautioned, however, that "aspects of the WHITEX data analysis preclude a quantitative determination of the exact fraction of the Grand Canyon haze problem that is attributable to NGS. These aspects are primarily related to problems with implementation and interpretation of multiple linear regression models." *Id.* at 37. Still, NAS acknowledged that Congress did not "require EPA to show a precise relationship between a source's emissions and all or a specific fraction of the visibility impairment within a Class I area." *Id.* at 5, 37.

SRP sponsored its own monitoring study in the winter of 1990 — the Navajo Generating Station Visibility Study ("NGSVS") — to investigate the sources of visibility impairment in the Grand Canyon and to determine what improvement in visibility would result from a reduction of SO_2 emissions at NGS. The NGSVS data indicated that controlling SO_2 emissions from NGS would at most result in a 2% improvement in the winter seasonal average standard visual range. While detailing some episodes of visibility impairment attributable to NGS, the NGSVS report generally found that "the NGS was only part of a regional problem and that it was not the dominant contributor of sulfates." Sonoma Technol-

ogy Inc., Navajo Generating Station Visibility Study 2-11 (L. Willard Richards et al. eds., 1991).

In February 1991, EPA proposed to revise the FIP for Arizona to include emission limits under BART to address wintertime visibility impairment at the Grand Canyon reasonably attributable to NGS. *See* 56 Fed. Reg. 5,173 (1991) (codified at 40 C.F.R. § 52). EPA solicited public comment on four possible regulatory options, and proposed one of those options — to require as BART for NGS a 70% continuous SO_2 emission limitation, determined on a thirty-day rolling average, to be phased-in between 1995 and 1999. *Id.* at 5,183-84. After a public comment period of over nine weeks, senior EPA policy officials met with the NGS owners, representatives of the State of Arizona, and certain environmental groups, including the Grand Canyon Trust and the EDF, to explore further additional control options which might produce a pareto optimal solution, more environmentally protective *and* economically efficient.[5] These meetings resulted in a "memorandum of understanding" which recommended that EPA adopt a regulatory approach designed to achieve a greater degree of visibility improvement in the Grand Canyon at lower cost than the proposal published by EPA in February 1991. EPA published the proposal outlined in the memorandum of understanding and reopened the public comment period. *See* 56 Fed. Reg. 38,399, 38,401 (1991) (codified at 40 C.F.R. § 52). EPA received twenty-one comments during this supplemental period, eighteen of which supported the new proposal. *See* 56 Fed. Reg. at 50,177.

In the Final Rule, dated October 3, 1991, EPA issued its final determination that certain visibility impairment episodes at the Grand Canyon were "traceable to NGS and that NGS is a dominant contributor to certain visibility impairment episodes," and promulgated revisions to the Arizona visibility

[5]Summaries of these meetings were placed in the administrative record. *See* 56 Fed. Reg. at 50,177.

FIP to address the impairment. *Id.* The revisions adopted a regulatory approach consistent with the memorandum of understanding's proposal, reducing SO_2 emissions 90% to a level of 0.10 lb/MMBtu. *Id.* EPA determined that this approach would more adequately achieve "reasonable progress" toward the national visibility goal under section 169A(b)(2) of the Act, 42 U.S.C. § 7491(b)(2), than would the alternative provided by BART analysis. *See* 56 Fed. Reg. at 50,177. As required by section 307(d) of the Act, EPA's action was "accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period." 42 U.S.C. § 7607(d)(6)(B). EPA issued its responses in the regulation itself and in a supplementary ninety-one page document entitled "Response to Public Comments: Proposed Revisions to Arizona Visibility FIP for Navajo Generating Station" [hereinafter *Response to Public Comments*].

II. STANDING

First, as a threshold jurisdictional matter, EPA challenges whether the Districts have standing to bring this action. We find that the Districts do have standing.

A. *Constitutional Standing*

The Supreme Court recently outlined the three elements of the "irreducible constitutional minimum of standing" in *Lujan v. Defenders of Wildlife*, 112 S. Ct. 2130 (1992):

> First, the plaintiff must have suffered an "injury in fact"—an invasion of a legally-protected interest which is (a) concrete and particularized, and (b) "actual or imminent, not 'conjectural' or 'hypothetical.' " Second, there must be a causal connection between the injury and the conduct complained of—the injury has to be "fairly ... trace[able] to the challenged action of the defendant,

> and not . . . th[e] result [of] the independent action of some third party not before the court." Third, it must be "likely," as opposed to merely "speculative," that the injury will be "redressed by a favorable decision."

Id. at 2136 (footnote, citations omitted; ellipses in original). Justice Scalia elaborated that "when the plaintiff is not himself the object of the government action or inaction he challenges, standing is not precluded, but it is ordinarily 'substantially more difficult' to establish." *Id.* at 2137 (quoting *Allen v. Wright*, 468 U.S. 737, 758 (1984)).

1. *Injury in Fact*

The Districts' claimed injury is an economic one: CAWCD claims it is contractually required to repay much of BOR's 24.3% share of the costs of installing and maintaining emission controls at NGS as required by the Final Rule. Pecuniary injury is clearly "a sufficient basis for standing." *See Fair v. EPA*, 795 F.2d 851, 853-54 (9th Cir. 1986) (citing cases). But while pecuniary or economic injury is generally a legally protected interest, the "injury in fact" test " 'requires that the party seeking review be himself among the injured.' " *Lujan*, 112 S. Ct. at 2137 (quoting *Sierra Club v. Morton*, 405 U.S. 727, 734-35 (1972)). That party's injury must be (a) concrete and particularized, and (b) actual or imminent, and not conjectural or hypothetical. *Id.* at 2136.

EPA argues that the owners of NGS are the ones directly aggrieved by the Final Rule, and that the indirect economic harm that the Districts may suffer as a result of their financial obligation to one of NGS's owners is too attenuated an interest to provide them with standing to bring this challenge. EPA claims the Districts' injury is purely speculative because: (1) CAWCD concedes it will attempt to pass on increased costs caused by the Final Rule to its water users and taxpayers (including the four petitioning irrigation districts); and (2)

CAWCD has failed to demonstrate that BOR will in fact have to pay a portion of any existing compliance costs,[6] or that CAWCD will be required under contract to reimburse BOR for a portion of those costs assuming they exist. Thus, EPA argues, the Districts' economic injury is too indirect, speculative, and hypothetical to provide them with standing.

[1] We conclude that CAWCD's economic injury is sufficiently concrete and imminent to accord it standing to litigate this action. The Districts' claimed injury is by no means "a general or amorphous harm," *National Wildlife Fed'n v. Burford*, 871 F.2d 849, 852 (9th Cir. 1989), nor is it a mere generalized grievance. *See Lujan*, 112 S. Ct. at 2143. While the extent of CAWCD's economic harm is not readily determinable, the record reveals that the Final Rule will likely cause Petitioners *some amount* of pecuniary harm given their obligation to repay BOR's share of the costs imposed by the Final Rule. Neither the sale of marketable allowances nor the possibility of passing on increased costs to consumers undermine the Districts' showing of the required "actual or threatened injury." *Valley Forge Christian College v. Americans United for Separation of Church & State, Inc.*, 454 U.S. 464, 472 (1982); *Competitive Enter. Inst. v. NHTSA*, 901 F.2d 107, 112 (D.C. Cir. 1990).

2. *Causation and Redressability*

[2] In addition to the injury in fact requirement, the Districts must prove causation and redressability, i.e., that their alleged economic injury is fairly traceable to EPA's challenged action, and that the relief requested is likely to redress that injury. *Lujan*, 112 S. Ct. at 2136. EPA argues that since

[6] Under section 403(b) of the Act, a regulated party may transfer SO_2 allowances under an allowance trading program. *See* 42 U.S.C. § 7651b(b). EPA notes that sale of allowances may offset the required capital investment for control equipment. Thus, EPA argues, capital costs may never be passed on to the District.

the Districts' alleged economic injury flows from obligations under the BOR/CAWCD agreement, the injury is not caused by or fairly traceable to the challenged agency action. This argument misses the point. While CAWCD's contractual obligations may provide the basis for its economic liability for the increased costs imposed by the Final Rule, that hardly means that the Final Rule itself is not the direct cause of that liability. Further, the involvement of an intermediate third-party here does not undermine the Districts' causation argument since "the government's action [is] substantially likely to cause the petitioners' injury despite the presence of intermediary parties." *Competitive Enter.*, 901 F.2d at 114 (consumer organization has standing to challenge NHTSA fuel economy standards on grounds that organization members would be hindered in their ability to purchase larger vehicles). Finally, the Districts' economic injury is likely to be redressed by a favorable decision since elimination of the Final Rule would necessarily eliminate the increased financial burden the rule causes.

B. *Prudential Standing*

[3] In addition to the constitutional standing requirements, Petitioners must also prove that their asserted interest is "within the zone of interests protected by" the Clean Air Act. *See, e.g., Fair v. EPA*, 795 F.2d at 854.

EPA contends that the Districts' economic injury is not within the zone of interests of the Act's visibility provisions, which are designed to "preserve, protect, and enhance the air quality in national parks." 42 U.S.C. § 7470(2). EPA's argument ignores the fact that "the zone of interest test is 'not meant to be particularly demanding.'" *National Wildlife Fed'n v. Burford*, 871 F.2d at 852 (quoting *Clarke v. Securities Indus. Ass'n*, 479 U.S. 388, 399 (1987)). As the Supreme Court clarified in *Clarke*:

> In cases where the plaintiff is not itself the subject of the contested regulatory action, the test denies a right

> of review if the plaintiff's interests are so marginally related to or inconsistent with the purposes implicit in the statute that it cannot reasonably be assumed that Congress intended to permit the suit.

479 U.S. at 399. Under this permissive standard, the Districts' economic injury sufficiently falls within the "zone of interests" protected by the visibility provisions of the Act. Section 169A of the Act requires the Administrator to consider "the costs of compliance" in setting standards to achieve reasonable progress towards the national visibility goal. 42 U.S.C. § 7491(g)(1). As entities required to pay those costs of compliance, the Districts' interests cannot reasonably be described as "marginally related to or inconsistent with" the purposes of the Act.

We therefore conclude that Petitioners have standing to bring this challenge.

III. STANDARD OF REVIEW

The appropriate judicial review of the regulations at issue here is provided for in section 307(d) of the Act, 42 U.S.C. § 7607(d). In relevant part, section 307(d)(9) provides that a reviewing court may reverse any action of the Administrator found to be

> **(A)** arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;
>
> . . .
>
> **(C)** in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; or
>
> **(D)** without observance of procedure required by law, if (i) such failure to observe such procedure is arbitrary or capricious, (ii) the requirement of para-

> graph (7)(B) has been met, and (iii) the condition of the last sentence of paragraph (8) is met.

42 U.S.C. §§ 7607(d)(9)(A), (C)-(D).

Paragraph (7)(B) generally limits judicial review to procedural objections "raised with reasonable specificity during the period for public comment." *Id.* at § 7607(d)(7)(B). But paragraph (7)(B) does provide for mandatory reconsideration of the rule by the agency if an objecting party can "demonstrate to the Administrator" that (1) it was "impracticable" to properly raise a given procedural objection, and (2) the "objection is of central relevance to the outcome of the rule." *Id.*[7] The last sentence of paragraph (8) further provides:

> In reviewing alleged procedural errors, the court may invalidate the rule only if the errors were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.

42 U.S.C. § 7607(d)(8).

Review of EPA's actions under section 307(d) of the Act is guided by the appropriate deference given to an agency's

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[7]The relevant portion of paragraph (7)(B) more fully provides:

> If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule, the Administrator shall convene a proceeding for reconsideration of the rule .... If the Administrator refuses to convene such a proceeding, such person may seek review of such refusal in the United States court of appeals for the appropriate circuit ....

42 U.S.C. § 7607(d)(7)(B).

interpretation of the statute Congress has entrusted it to administer. *Chevron U.S.A. Inc. v. NRDC, Inc.*, 467 U.S. 837, 843 (1984) (where the Clean Air Act is either "silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute"). "Deference also guides our review of the Administrator's interpretation of EPA regulations if the interpretation is not unreasonable." *Citizens for Clean Air v. EPA*, 959 F.2d 839, 844 (9th Cir. 1992); *see also Hawaiian Elec. Co. v. EPA*, 723 F.2d 1440, 1447 (9th Cir. 1984) ("[W]hen EPA is interpreting its own regulations, it is entitled to even more deference."). Moreover, the Supreme Court has advised that "a reviewing court must generally be at its most deferential" when the agency is "making predictions, within its area of special expertise, at the frontiers of science." *Baltimore Gas & Elec. Co. v. NRDC, Inc.*, 462 U.S. 87, 103 (1983). In such situations, this court is to "defer to the agency's interpretation of equivocal evidence, so long as it is reasonable." *NRDC, Inc. v. EPA*, 902 F.2d 962, 968 (D.C. Cir. 1990), *vacated, in part, dismissed*, 921 F.2d 326 (D.C. Cir.), *certs. dismissed*, 111 S. Ct. 806, *cert. denied*, 111 S. Ct. 952 (1991).

While this court should not defer to the agency where it "simply has not exercised its expertise," *Public Citizen Health Research Group v. Tyson*, 796 F.2d 1479, 1505 (D.C. Cir. 1986),[8] courts are "extremely deferential to administrative agencies in cases involving technical rulemaking decisions." *New York v. Reilly*, 969 F.2d 1147, 1152 (D.C. Cir. 1992); *see also id.* at 1150-51 ("We are particularly deferential when

[8]For instance, in *Motor Vehicle Manufacturers Association of United States, Inc. v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29 (1983), the Supreme Court found an agency ruling arbitrary and capricious where the agency had "entirely failed to consider an important aspect of the problem." *Id.* at 43. *State Farm* shows that the "expertise model" does not necessarily mandate judicial deference, since the Court there took a "hard look" to ensure that the agency was in fact using its expertise in arriving at policy decisions.

reviewing agency actions involving policy decisions based on uncertain technical information."); *Tyson*, 796 F.2d at 1505 ("[A]s long as Congress delegates power to an agency to regulate on the borders of the unknown, courts cannot interfere with reasonable interpretations of equivocal evidence.").

IV. DISCUSSION

A. *EPA's Statutory Authority to Promulgate the Final Rule*

Petitioners argue that in promulgating the Final Rule, EPA acted "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right" under 42 U.S.C. § 7607(d)(9)(c). Petitioners claim that the Final Rule regulates "regional haze" when EPA's own regulations expressly defer regulation of that type of visibility impairment until future phases. *See* 45 Fed. Reg. at 80,086. We conclude that the Final Rule was legitimately promulgated under Phase I regulations directed at "reasonably attributable" visibility impairment.

Petitioners rely on *Vermont v. Thomas*, 850 F.2d 99 (2d Cir. 1988), where EPA reaffirmed that it was without authority to regulate "regional haze" and that measures addressing that type of impairment are outside the scope of EPA's jurisdiction. This reliance is misplaced. In *Thomas*, the state of Vermont submitted to EPA an SIP which "proposed a federally enforceable 'long-term strategy' to combat the effects of regional haze" at the Lye Brook National Wilderness Area. *Id.* at 101. The court held that without EPA rulemaking addressing regional haze, the state's regional haze measures were "outside the scope" of EPA's statutory and regulatory authority. *Id.* at 103-04. Here, EPA properly promulgated its Final Rule under its Phase I regulations directed at "reasonably attributable" impairment.[9] *Thomas* is thus distin-

[9]In the Final Rule itself, EPA made eminently clear that its action addressed Phase I visibility impairment rather than Phase II "regional haze." *See* 56 Fed. Reg at 50,172. Pursuant to Congress's 1990 amend-

guishable since it involved a direct and explicit attempt to regulate "regional haze."

[4] EPA has acknowledged that "NGS is not the only source of visibility impairment" at the Grand Canyon, 56 Fed. Reg. at 50,177, and that regional haze also adversely affects visibility there. *Response to Public Comments* at 23. Nonetheless, these mere facts hardly mean that EPA is without statutory authority to remedy the impairment attributable to NGS. Even if the Final Rule addresses only a small fraction of the visibility impairment at the Grand Canyon, EPA still has the statutory authority to address that portion of the visibility impairment problem which is, in fact, "reasonably attributable" to NGS. Congress mandated an extremely low triggering threshold, requiring the installment of stringent emission controls when an individual source "emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility" in a class I Federal area. 42 U.S.C. § 7491(b)(2)(A). The National Academy of Sciences correctly noted that Congress has not required iron-clad scientific certainty establishing the precise relationship between a source's emission and resulting visibility impairment:

> The phrase "may reasonably be anticipated" suggests that Congress did not intend to require EPA to show a precise relationship between a source's emissions and all or a specific fraction of the visibility impair-

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ments to the Act, EPA subsequently established the Grand Canyon Visibility Transport Commission ("GCVTC"), 42 U.S.C. § 7492(f), whose duty it is to make recommendations on "promulgation of regulations under section 7491 of this title to address long range strategies for addressing regional haze which impairs visibility in affected class I [Federal] areas" like the Grand Canyon. 42 U.S.C. § 7492(d)(2)(C). Congress envisioned GCVTC as a long-term complement to EPA's then-pending efforts to remedy impairment at the Grand Canyon which was attributable to NGS. *See* 136 Cong. Rec. S2890 (March 21, 1990).

> ment within a Class I area. Rather, EPA is to assess the risk in light of policy considerations regarding the respective risks of overprotection and underprotection.

Haze in the Grand Canyon at 5.

[5] Acting in place of the state of Arizona pursuant to an FIP under 42 U.S.C. § 7410(c), EPA "stands in the shoes of the defaulting State, and all of the rights and duties that would otherwise fall to the State accrue instead to EPA." 54 Fed. Reg. at 36,952. EPA is therefore granted broad discretion in determining whether visibility impairment is "reasonably attributable" to a given source. *See* 40 C.F.R. § 51.301(s) (defining "reasonably attributable" as "attributable by visual observation *or any other technique the State deems appropriate*") (emphasis added). This broad, all-inclusive definition of the term "reasonably attributable" directly refutes Petitioners' argument that EPA is limited to addressing visibility impairment caused by a noticeable plume that is directly traceable to a given source through the use of visual observation or simple monitoring techniques.

[6] We conclude that the technical, scientific record more than adequately supports EPA's reasonable conclusion that visibility impairment in the Grand Canyon is "reasonably attributable" to NGS. We defer to the agency's reasonable interpretation of its own regulations and statutory mandate. Its interpretation is most certainly consonant with Congress's apparent intent. For instance, in his introduction of the Conference Committee report to the House, Representative Henry Waxman stated:

> Protecting the Grand Canyon simply must become a normal business practice of the American industry . . . [T]he Four Corners and Navajo powerplants can expect to retrofit with additional pollution controls to

> limit the vast deterioration in visibility which their plumes have caused.
>
> Impairment of visibility is the single most apparent impact air pollution has on the environment. It is our intent that aggressive steps be taken to reduce this eyesore which has defaced our grand vistas in the West.

123 Cong. Rec. 27,076 (1977) (statement of Rep. Waxman). EPA's interpretation of its authority to determine whether visibility impairment is "reasonably attributable" to NGS is entitled to deference from this court since the agency's " 'choice represents a reasonable accommodation of conflicting policies that were committed to the agency's care by the statute,' " which this court " 'should not disturb' " since it does not appear " 'from the statute or its legislative history that the accommodation is not one that Congress would have sanctioned.' " *Chevron*, 467 U.S. at 845 (quoting *United States v. Shimer*, 367 U.S. 374, 383 (1961)).

B. *The Final Rule as the Product of "Reasoned Decisionmaking"*

Petitioners proffer various arguments that the Final Rule is not the product of "reasoned decisionmaking." They assert that EPA has acted arbitrarily and capriciously by overestimating the improvements in visibility expected from the Final Rule's emission controls at NGS, by purportedly failing to address criticisms to the scientific data and analyses on which it relied, and by allegedly ignoring certain evidence while placing undue reliance on other evidence. At bottom, however, Petitioners' real complaint appears to be that the Final Rule will most likely lead to minimal visibility improvement at the Grand Canyon while imposing a substantial financial burden on them. Nonetheless, we find unsupported Petitioners' legal claim that EPA acted arbitrarily and capriciously in promulgating the Final Rule. The Final Rule makes

"reasonable progress" toward the national goal of remedying visibility impairment at the Grand Canyon, and is the product of reasoned decisionmaking.

1. *The Final Rule as "Reasonable Progress" toward the National Goal of Remedying Visibility Impairment at the Grand Canyon*

In reviewing whether the agency's action in promulgating the Final Rule was arbitrary and capricious, this court "is not to substitute its judgment for that of the agency." *State Farm*, 463 U.S. at 43. Instead, we inquire whether the agency has "examine[d] the relevant data and articulate[d] a satisfactory explanation for its action, including a 'rational connection between the facts found and the choice made.' " *Id.* (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). Our review is limited to "whether the agency considered the relevant factors and whether there has been a clear error of judgment." *NRDC, Inc. v. EPA*, 966 F.2d 1292, 1297 (9th Cir. 1992) (citing *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971)). In this case, the relevant factors are provided by Congress's definition of "reasonable progress" in 42 U.S.C. § 7491(g)(1). Additionally, as the D.C. Circuit recently noted in discussing a similar provision of the Act, "[b]ecause Congress did not assign the specific weight the Administrator should accord each of these factors, the Administrator is free to exercise his discretion in this area." *New York v. Reilly*, 969 F.2d at 1150 (discussing 42 U.S.C. § 7411(a)(1)(C)).[10]

[10]Petitioners incorrectly suggest that EPA was required to engage in "cost-benefit" analysis. Congress has not required "cost-benefit" analysis in the Act. *Cf. American Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490, 510 (1981) ("When Congress has intended that an agency engage in cost-benefit analysis, it has clearly indicated such intent on the face of the statute.").

a. *The "Reasonable Progress" Provisions*

[7] In the Act, Congress directed EPA to promulgate regulations to assure "reasonable progress toward meeting the national goal" of preventing future, and remedying existing visibility impairment in Class I federal areas like the Grand Canyon. *See* 42 U.S.C. §§ 7491(a)(4), (a)(1), (b)(2), (b)(2)(B). Congress chose not to define the term "reasonable progress," but instead set forth several factors for the agency to consider:

> In determining reasonable progress there shall be taken into consideration the costs of compliance, the time necessary for compliance, and the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements[.]

42 U.S.C. § 7491(g)(1). In promulgating the Final Rule, EPA relied on the "reasonable progress" provisions as its statutory authority. *See* 56 Fed. Reg. at 50,177 (noting that EPA adopts the "reasonable progress" provisions of section 169A(b)(2), 42 U.S.C. § 7491(b)(2) as the "legal rationale" for the Final Rule).

[8] Generally, the Act and its regulations require the application of BART once it has been determined that visibility impairment is "reasonably attributable" to an existing source like NGS. *See* 42 U.S.C. § 7491(b)(2); 40 C.F.R. § 51.302(c)(4)(i). Under the unique circumstances of this case, however, EPA chose not to adopt the emission control limits indicated by BART analysis, but instead to adopt an emission limitations standard that would produce greater visibility improvement at a lower cost. Congress's use of the term "including" in § 7491(b)(2) prior to its listing BART as a method of attaining "reasonable progress" supports EPA's position that it has the discretion to adopt implementation plan provisions other than those provided by BART analyses in situations where the agency reasonably concludes that more "reasonable

progress" will thereby be attained. Since the Act itself is ambiguous on the specific issue, we apply the Supreme Court's deferential standard from *Chevron* and hold that the agency's reliance on the "reasonable progress" provisions is a "permissible construction of the statute," 467 U.S. at 843, since "reasonable progress" is the overarching requirement that implementation plan revisions under 42 U.S.C. § 7491(b)(2) must address.

b. *EPA Reasonably Considered the Relevant Factors*

[9] The administrative record reveals that EPA adequately considered the relevant factors in promulgating the Final Rule.[11] Petitioners' essential argument does not claim that EPA failed to consider the relevant factors, but instead contends that EPA erred in its consideration of those factors. This court is not to substitute Petitioners' judgment, or its own, for that of EPA, as long as the agency's interpretation is reasonable. In fact, this is just the type of case in which the Supreme Court has stated that judicial review should "be at its most deferential," because the agency is "making predictions, within its area of special expertise, at the frontiers of science." *Baltimore Gas & Elec. Co.*, 462 U.S. at 103. We therefore find that the agency's interpretation of the evidence, and its weighing of the relevant factors, are reasonable, and that the Final Rule is the product of "reasoned decisionmaking."

2. *Petitioners Have Failed to Demonstrate that EPA Acted in an Arbitrary and Capricious Manner*

Petitioners argue that EPA relied on discredited elements of a seriously flawed study, failed to refute significant criticisms which undercut the basis for EPA's improvement estimate, and refused to consider highly relevant evidence which con-

[11]Actually, EPA not only considered the "reasonable progress" factors, but also considered expected visibility improvement under the Final Rule, as required by BART analysis.

tradicted its estimate. They conclude that EPA has acted arbitrarily and capriciously. We reject these arguments.

[10] The allegedly discredited study on which EPA relied was the Park Service's analysis of the WHITEX data. The record reveals, however, that EPA acknowledged the limitations of the Park Service report (even seeking and obtaining NAS comment on it), and did not rely solely upon that report's conclusions. As discussed *supra*, EPA's determination that visibility impairment at the Grand Canyon is "reasonably attributable" to emissions at NGS was eminently reasonable and adequately supported by a substantial body of scientific and technical evidence in the record. Further, as the D.C. Circuit noted in *NRDC v. EPA*:

> "The Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as 'fact,' and the like."

902 F.2d at 968 (quoting *Ethyl Corp. v. EPA*, 541 F.2d 1, 28 (D.C. Cir.) (*en banc*), *cert. denied*, 426 U.S. 941 (1976)). While this court must still ensure that "the agency has made a reasoned decision based on 'reasonable extrapolations from some reliable evidence,' " *id.* (quoting *NRDC, Inc. v. Thomas*, 805 F.2d 410, 432 (D.C. Cir. 1986)), this standard adequately has been met here.

Petitioners further challenge as arbitrary and capricious EPA's estimate of the quantum of visibility improvement which the agency expects to result from imposition of the Final Rule's emission limits at NGS. In arriving at its estimate that the Final Rule "should improve the winter seasonal average visibility above the rim of the [Grand Canyon] approximately 7 percent," 56 Fed. Reg at 50,180, EPA discussed the estimates of three studies: (1) the Park Service's WHITEX

estimate of 14% improvement, (2) the NGSVS estimate of at most a 2% improvement, and (3) a modelling study, conducted by Douglas Latimer and submitted during the comment period, which estimated a range of 4 to 8% improvement. Petitioners contend that EPA arrived at its 7% estimate in an arbitrary and capricious manner because, they contend, EPA failed to consider and place in the administrative record a new report prepared by Latimer in which he allegedly reconsiders his previous estimate of visibility improvement, reducing it to 3 to 4%. Petitioners additionally claim that failure to put this new report in the administrative record constitutes an abuse of discretion. We find Petitioners' challenge both legally untenable and factually misleading.

First, the challenge is legally untenable because it relies on this court's consideration of evidence — the new Latimer report — which is not a part of the administrative record. In the Act, Congress explicitly and unambiguously provided that "the record for judicial review shall consist *exclusively*" of certain specifically enumerated categories of materials. 42 U.S.C. § 7607(d)(7)(A) (emphasis added). "Nothing in the statute or its legislative history indicates that a party or the agency may reopen the record by placing additional materials (other than those *required* by the statute and wrongfully omitted by EPA) in the docket after promulgation of the rule." *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1183 (D.C. Cir.), *cert. denied*, 449 U.S. 1042 (1980).[12] The new Latimer report was not included in the administrative record, nor was it required to be. EPA explains that the report was not directly related to NGS, but was instead submitted to EPA in the context of the GCVTC regional haze efforts under section 169B of the Act.

[12]Petitioners' reliance on *Kent County v. EPA*, 963 F.2d 391 (D.C. Cir. 1992) is misplaced because, unlike the Clean Air Act here, the statutory provision at issue in *Kent County* contained no special procedural provisions displacing general rules of administrative law governing the administrative record for judicial review. *Compare* 42 U.S.C. §§ 7607(d)(1), (d)(7)(A) *with* 42 U.S.C. § 9613(a).

Additionally, Petitioners ignore the route for administrative and judicial review of "new information" and alleged "procedural errors" in the creation of the administrative docket that Congress created: 42 U.S.C. § 7607(d)(7)(B)'s mechanism for reconsideration by the agency. Petitioners have failed to move for reconsideration and are now trying to circumvent this congressionally mandated route by petitioning for direct judicial review. We therefore deny Petitioners' motion to supplement the administrative record and direct Petitioners to consult section 7607(d)(7)(B) in order to fashion their claim as a petition for reconsideration to EPA, as Congress had envisioned.

Second, even if this court were to consider Petitioners' argument on the merits, their challenge is misleading because Latimer himself indicates that Petitioners have misrepresented the statements and conclusions contained in his new report. We therefore reject Petitioners' argument that EPA has somehow acted arbitrarily or capriciously, or abused its discretion, through the manner in which it arrived at its estimate of visibility improvement.

V. CONCLUSION

In the final analysis, Petitioners simply adhere to a different interpretation of the rather disparate and equivocal scientific data in the record. While Petitioners may not be satisfied with EPA's responses, it is not EPA's duty to satisfy all of the concerns of potentially affected or aggrieved parties. EPA conducted an extensive and involved notice and comment period, and adequately met its statutory obligation of responding to significant comments and criticisms under 42 U.S.C. § 7607(d)(6)(B). Notwithstanding Petitioners' challenge, the Final Rule is the result of a site-specific informal rulemaking process that included virtually unprecedented cooperation between the governmental agency and the directly affected parties. *See generally* D. Michael Rappoport & John F. Cooney, *Visibility at the Grand Canyon: Regulatory Negotia-*

tions Under the Clean Air Act, 24 Ariz. St. L.J. 627 (1992). Petitioners' arguments afford no reason for this court disruptively to interject itself into the picture. Because Congress delegated to EPA the power to "regulate on the borders of the unknown," this court will not interfere with the agency's "reasonable interpretations of equivocal evidence." *Public Citizen Health Research Group v. Tyson*, 796 F.2d at 1505. Even if this case highlights how hard it is to engage in "reasoned decisionmaking" in cases involving scientific uncertainty, EPA's actions in promulgating the Final Rule were reasonable and within the bounds of its statutory authority, and not arbitrary and capricious.

The Districts' petition for review and motion to supplement the administrative record are accordingly DENIED.

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

A.[AD-FRL-4018-5]

Approval and Promulgation of Implementation Plans: Revision of the Visibility FIP for Arizona

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This notice revises the Federal implementation plan (FIP) for the State of Arizona to include a sulfur dioxide (SO_2) emission limit of 42 nanograms per Joule (ng/J) [0.10 pound per million British thermal units (lb/MMBtu)], heat input for the Navajo Generating Station (NGS) to remedy visibility impairment in the Grand Canyon National Park (GCNP). Compliance with this emission limit will be phased-in by unit in 1997, 1998, and 1999 and determined on a plant-wide annual rolling average basis. In addition, NGS will be required to reschedule its maintenance such that 6 unit-weeks of maintenance will be performed during the winter months.

This action is taken pursuant to sections 169A and 110(c) of the Clean Air Act (Act), 42 U.S.C. sections 7491 and 7410(c), which require EPA, upon default by a State, to take appropriate measures to remedy certain certified visibility impairments in mandatory Class I areas. The timing of today's action is in accordance with the revised settlement agreement between EPA and Environmental Defense Fund (EDF) in *EDF v. Reilly*, No. C82-6850 RPA (N.D. Cal.).

EFFECTIVE DATE: This action will be effective on November 4, 1991.

ADDRESSES: *Docket*: Pursuant to section 307(d)(1)(B) of the Act, 42 U.S.C. 7607(d)(1)(B), this action is subject to the procedural requirements of section 307(d). Therefore, EPA established Docket A-89-02A for this action. Materials related to the development of this notice have been placed in this docket.

Materials related to EPA's preliminary attribution determination (54 FR 36948 (September 5, 1989)) have been placed in Docket A-89-02. For background information, materials related to the development of the visibility protection program (40 CFR 51.300 *et seq.*) are available in Docket A-79-40. Also, materials related to the development of the visibility new source review (NSR) and visibility monitoring strategies are available in Docket A-84-32. Materials related to the visibility long-term strategy, implementation of control strategy, and integral vista program are available in Docket A-85-26. All dockets are available for public inspection and copying between 8:30 a.m. to 12 noon and 1:30 p.m. to 3:30 p.m., Monday through Friday, at EPA's Central Docket Section, Office of the General Counsel, room 1500, 401 M Street, SW., Washington, DC 20460. A reasonable fee may be charged for copies.

FOR FURTHER INFORMATION CONTACT: Mr. David H. Stonefield, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards (MD-15), Research Triangle Park, North Carolina 27711, (919) 541-5350 or FTS 629-5350.

SUPPLEMENTARY INFORMATION

I. Background

A. Regulatory Requirements

Section 169A of the Act, 42 U.S.C. 7491, sets as a national goal "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." Mandatory Class I Federal areas are certain national parks, wildernesses, and international parks as described in section 162(a) of the Act, 42 U.S.C. 7472(a). Section 169A requires that EPA promulgate regulations to assure reasonable progress toward meeting the national goal for mandatory Class I Federal areas where EPA has determined that visibility is an important value. On November 30, 1979, EPA identified 156 such areas, including the GCNP in Arizona, where visibility is an important air quality-related value (44 FR 69122). Section 169A specifically requires EPA to

promulgate regulations requiring States to amend their State implementation plans (SIP's) to provide reasonable progress toward meeting the national goal for the 156 areas. On December 2, 1980, EPA promulgated the required visibility regulations (45 FR 80084, codified at 40 CFR 51.300 *et seq.*). The visibility regulations require the 36 States listed in section 51.300(b), including Arizona, to:

1. Coordinate SIP development with the appropriate Federal land managers (FLM's).

2. Develop programs to assess and remedy Phase I visibility impairment from existing sources and to prevent visibility impairment from new sources.

3. Develop a long-term (10 to 15 years) strategy to address, among other things, Phase I visibility impairment to assure reasonable progress toward the national goal.

4. Develop a visibility monitoring strategy to collect information on visibility conditions.

5. Consider in all aspects of visibility protection any "integral vistas" (important views of landmarks or panoramas that extend outside of the boundaries of the Class I area) identified by the FLM's as critical to the visitors' enjoyment of the Class I areas. The affected States were required to submit revised SIP's satisfying these provisions by September 2, 1981 (see 45 FR 80091, codified at 40 CFR 51.302(a)(1)).[1]

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[1] The EPA's 1980 regulations implementing the statutory requirements of section 169A address visibility impairment that is reasonably attributable to a single source or small group of sources ("Phase I" impairment) (see generally 45 FR 80084 (December 2, 1980)). Recognizing certain scientific and technical limitations, EPA, in promulgating the 1980 regulations, deferred regulatory action on more "complex problems such as regional haze and urban plumes." *Id.* at 80086. Today, in accordance with the 1980 regulations, EPA is taking regulatory action to remedy visibility impairment that is caused by NGS. The EPA is in the process of establishing the Grand Canyon Visibility Transport Commission as required by section 169B of the Act. The duties of that commission include making recommendations on "promulgation of regulations under section 169A to address long-range strategies for addressing regional haze which impairs visibility in * * * the GCNP" (section 169B(d)(2)(C)).

The second and third requirements listed above are of particular relevance to today's action. Pursuant to 40 CFR 51.302(c)(2), each affected State is required to include in its SIP such emission limitations, schedules of compliance, and other measures as may be necessary to make reasonable progress toward the national visibility goal. Under 40 CFR 51.302(c)(1), an FLM may certify to a State that there exists impairment of visibility in any mandatory Class I Federal area. Such impairment must be addressed in accordance with 40 CFR 51.302(c) which sets forth measures for achieving reasonable progress, including best available retrofit technology (BART) and a long-term strategy (see 40 CFR 51.302(c)(1) and (2), section 169A(b)(2)(A) and (B)). Pursuant to 40 CFR 51.302(c)(4)(i), where impairment is certified at least 6 months prior to plan submission, an affected State must identify each existing stationary facility which may "reasonably be anticipated to cause or contribute" to any such impairment which is "reasonably attributable to that existing stationary facility," and analyze for BART any facility so identified. "Reasonably attributable" impairment is impairment "attributable by visual observation or any other technique the State deems appropriate" (40 CFR 51.301(s)). Where a State defaults on its obligation sunder the visibility regulations, EPA may act in place of the State pursuant to a FIP under section 110(c) of the Act, 42 U.S.C. 7410(c),[2] and

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[2] Section 110(c) requires EPA to promulgate FIP's whenever a State fails to submit an implementation plan (or portion thereof) which meets the requirements of section 110, whenever the Administrator determines that a plan (or portion) is not in accordance with the requirements of section 110, or whenever the State fails to revise its plan within 60 days after notification by the Administrator in accordance with section 110(a)(2)(H).

During the House of Representatives' consideration of the Conference Report on the 1977 Amendments to the Clean Air Act, Congressman Rogers reiterated that the conferees had agreed that EPA was to act where States failed to carry out their duties in implementing the requirements of section 169A. The pertinent part of Congressman Rogers' statement is as follows:

"The conferees * * * rejected a motion to delete EPA's supervisory role under section 110 to assure that the required progress towards that goal (the national visibility goal) will be achieved by the revised State plan. If a State visibility protection plan is not adequate to assure such progress, the Administrator must

promulgate such limitation and measures as are required to achieve reasonable progress. In such cases, all of the rights and duties that would otherwise fall to the State accrue instead to EPA.

The visibility regulations promulgated at 40 CFR 51.302(c)(4)(i) require that once a Phase I impairment has been certified, a State (or EPA if the State's visibility protection program addressing BART has not been approved, and EPA is acting in its place) must analyze for BART any specific existing stationary facility it identifies as a "reasonably attributable" source of the impairment. Pursuant to section 169A(b) of the Act (42 U.S.C. 7491(b)) and 40 CFR 51.302(C)(4)(iii), the emission limitation representing BART for fossil fuel-fired power plants with a generating capacity in excess of 750 megawatts (MW) must be determined pursuant to guidelines promulgated by the Administrator. This statutorily-required procedure for conducting a BART analysis is found in "Guidelines for Determining Best Available Retrofit Technology Analysis for Coal-Fired Power Plants and Other Stationary Facilities" (EPA-450/3-80-009b BART Guidelines). A copy of this document may be found in Docket A-89-02A.

In December 1982, environmental groups, including EDF, filed a citizens suit in the United States District Court for the Northern District of California alleging that EPA had failed to perform a nondiscretionary duty under section 110(c) of the ACT, 42 U.S.C. 7410(c), to promulgate visibility FIP's for the 35 States[3] that, at that time, had failed to submit SIP's to EPA as called for by the 1980 visibility regulations, *EDF v. Reilly*, No. C82-6850 RPA

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disapprove that portion of the SIP and promulgate a visibility protection plan under section 110(c). Thus, visibility protection in mandatory federal class I areas remains a national commitment, which is nationally enforceable."

See Senate Comm. on Environment and Public Works, 95th Cong. 2d.Sess. "A Legislative History of the Clean Air Act Amendment of 1977" No. 16, vol. 3 at 311, 320-21 (Comm. Print 1978).

[3] The State of Alaska had submitted a SIP which was approved on July 5, 1983 at 48 FR 30623.

(N.D. Cal.). The State of Arizona was one of the 35 States that failed to submit a revised SIP to EPA.

The EPA and the plaintiffs negotiated a settlement agreement for the remaining States which the court approved by order on April 20, 1984. For more information on details of the provisions of the original settlement, including a schedule of actions by EPA, see EPA's announcement of the agreement at 49 FR 20647 (May 16, 1984).

B. Settlement Agreement

To remedy the States' failure to submit the necessary SIP revisions during the time specified by the regulations, the settlement agreement replaced the original regulatory deadlines for visibility SIP provisions with a rulemaking schedule agreed to by the parties and approved by the court. This schedule required EPA to review the existing SIP's to determine any deficiencies, allow the States to cure those deficiencies, and to promulgate FIP's on a specified schedule for those States that still did not submit visibility SIP revisions to EPA. Specifically, the first part of the agreement required EPA to promulgate FIP's which cover the monitoring and NSR provisions of 40 CFR 51.305 and 51.307. The EPA promulgated its monitoring strategy for 23 States and its NSR provisions for 21 States, including Arizona, at 59 FR 28544 (July 12, 1985), 51 FR 5504 (February 1, 1986), and 51 FR 22937 (June 24, 1986). In separate notices, EPA approved the SIP's of the other States with respect to monitoring and NSR.

The second part of the settlement agreement required EPA to determine the adequacy of the SIP's to meet the remaining provisions of the visibility regulations and gave the States until December 1986 to submit additional measures that would avoid the need for a FIP. These provisions are the general plan provisions for achieving reasonable progress toward the national visibility goal including BART and other implementation control strategies (§ 51.302), integral vista protection (§ 51-302-307), and long-term strategies (§ 51.306). The settlement agreement required EPA to

promulgate FIP's to remedy any deficiencies on a specified schedule.

Pursuant to 40 CFR 51.302(c)(1), on November 14, 1985, the Department of the Interior (DOI) certified the existence of visibility impairment in all Class I areas within its jurisdiction in the lower 48 States.

On January 23, 1986, EPA determined that the SIP's of 32 States (including Arizona) were deficient with respect to the remaining visibility provisions (51 FR 3046) and offered the States an opportunity to submit corrective SIP revisions. Thereafter, EPA and the plaintiffs negotiated revisions to the settlement agreement which extended the deadlines for State action or, if the States failed to respond, Federal action proposing FIP's to remedy these deficiencies. The court approved these revisions by its order of September 9, 1986.[4]

On March 24, 1986, the DOI sent a letter to EPA which supplemented its earlier certification of visibility impairment. The letter addressed the GCNP and identified the NGS, a coal-fired power plant located near Page, Arizona, as a probable source of impairment in this Class I area. A copy of this letter may be found in Docket A-89-02.

Thirty-two affected States failed to submit visibility SIP revisions in response to the notice of deficiency. Consequently, in accordance with the revised settlement agreement, on March 12, 1987 (52 FR 7802), EPA proposed to disapprove the SIP's of 32 States, including Arizona, for failing to meet the remaining provisions of the visibility regulations, including general plan requirements to achieve reasonable progress toward the national visibility goal (which in turn includes BART, long-term strategies, and other control strategies). Also in accordance with the agreement, on November 24, 1987 (52 FR 45132), EPA took final action disapproving the affected SIP's, again including Arizona. In

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[4] A copy of the settlement agreement and revisions is available in Docket A-85-26 at the address given at the beginning of this notice.

that action, EPA also promulgated, as FIP measures under section 110(c), general plan requirements for these States. The EPA also determined that BART was unnecessary in 26 States because it could not reasonably attribute the visibility impairment of mandatory Class I Federal areas in these States to specific sources or small groups of sources. In addition, under the revised agreement, EPA deferred until August 31, 1988 a decision regarding the need for BART or other control measures in the FIP's for the States of Arizona, Maine, Minnesota, and Utah to address certified visibility impairments in seven Class I areas in these States which potentially could be reasonably attributed to a specific source pending acquisition and evaluation of additional technical information regarding the potential sources of impairment.

Because all of the additional information needed by EPA was forthcoming but still not available by August 1988, the Agency sought and received a second extension, until August 31, 1989, of the deadline for issuing a rulemaking proposal regarding the need for BART or other control measures to remedy visibility impairments in three of the remaining Class I areas (Moosehorn Wilderness, GCNP, and Canyonlands National Park). With regard to the impairment in the GCNP, EPA delayed action in order to allow the National Park Service (NPS) time to analyze the data from a 1987 winter visibility attribution study, termed the Winter Haze Intensive Tracer Experiment (WHITEX), conducted in the Colorado Plateau where the GCNP is located. In the meantime, on May 19, 1989 (54 FR 21904), in accordance with the second revision to the settlement agreement, EPA promulgated final decisions concerning certified visibility impairments in four of the seven Class I areas. Based on monitoring conducted in these areas, EPA found that the visibility impairments were not reasonably attributable to any specific source. Therefore, EPA determined that it was not necessary to revise the FIP's for the States of Maine, Minnesota, and Arizona to include BART or other control strategies to remedy impairments in Roosevelt Campobello International Park (Canada),

Voyageurs National Park (Minnesota), Saguaro Wilderness (Arizona), and Petrified Forest National Park (Arizona.

In April 1989, EPA received a draft report on WHITEX from the NPS.[5] Because of the delay in receiving this report, EPA believed that it lacked sufficient time to complete its analyses and issue a proposed rule by the August 31, 1989 deadline. Accordingly, EPA and EDF filed a joint motion to revise the settlement agreement for a third time, which was approved by order of the court dated July 6, 1989. Under this revision, there was no change in the deadlines for proposed action regarding Canyonlands National Park or Moosehorn Wilderness. As to GCNP, the third revision to the settlement agreement divided EPA's duty into two parts. The EPA would proceed, on a preliminary basis, to issue a finding on reasonably attributable impairment by the August 31, 1989 deadline. However, if EPA did provisionally identify a specific source of impairment, it would solicit comments on that finding and would have additional time to conduct a BART analysis. The EPA was to issue a rulemaking proposal on the need for BART by February 1, 1990 unless, in response to comments, EPA rejected its proposed identification and instead determined that BART was unnecessary.

In accordance with the third revision to the settlement agreement, EPA published a notice of proposed rulemaking on September 5, 1989 (54 FR 36948). Regarding Moosehorn Wilderness, EPA identified a source of the certified impairment but proposed that BART was unnecessary because the impairment would be adequately remedied by the retirement of certain existing emission units and the addition of pollution controls on other units pursuant to a permit issued under the Act's prevention of significant deterioration provisions. As to Canyonlands National Park, EPA could not reasonably attribute the certified impairment to a specific source at that time and so proposed that BART was unnecessary.

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[5] Malm, *et al.*, "The National Park Service Report on WHITEX Draft Final Report" (April 7, 1989).

On June 13, 1990 (55 FR 24060), EPA issued final decisions that BART was not necessary to address impairment in either the Moosehorn Wilderness or the Canyonlands National Park.

Regarding the GCNP, in the September 5, 1989 notice, EPA preliminarily attributed several episodes of wintertime visibility impairment to emissions form the NGS. In that regard, EPA reviewed the draft NPS report on WHITEX and concurred with the findings of the NPS. The EPA solicited comments on the merits of its preliminary attribution finding.

On November 28, 1989, the Salt River Project Agricultural Improvement and Power District (SRP), et al.,[*sic*] and Alabama Power Company, et al., [*sic*] intervenors in *EDF v. Reilly*, filed a motion requesting a 1-year delay in the rulemaking schedule so that, among other things, the intervenors could conduct their own studies of the visibility impairment in the GCNP. By order dated January 9, 1990, the court granted the intervenors' motion to extend the deadlines. This order set February 1, 1991, as the new deadline for EPA to propose whether or not to require BART emission limits for the NGS to remedy winter visibility impairment. The order also extended the deadline for final action on any proposal regarding BART until October 1991 (6 months after the close of the comment period).[6]

C. Navajo Generating Station

The NGS is a 2250 MW coal-fired power plant located near Page, Arizona, approximately 20 kilometers from the northern boundary of the GCNP. The NGS is a baseload generating station consisting of three 750 MW units which became operational between 1974 and 1976. The SRP is the operating agent for NGS

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[6] The EDF has appealed the extension of rulemaking deadlines in this case, *EDF v. Reilly*, No. 90-15264 (9th Cir.). That appeal is pending. In a Memorandum of Understanding (MOU) discussed below, parties to this litigation have agreed, in light of today's action, to petition (a) the Ninth Circuit to vacate the judgment below and remand the matter to the court below with instructions to dismiss and (b) the District Court for the Northern District of California to dismiss *EDF v. Reilly*, No. C82-6850.

which is jointly owned by the SRP,[7] the Los Angeles Department of Water and Power, the Arizona Public Service Company, the Nevada Power Company, and the Tucson Electric Power Company. Existing pollution control equipment at NGS includes electrostatic precipitators for particulate matter (PM) removal and specific burner design for nitrogen oxides (NO_x) control.

D. February 8, 1991 Proposal

On February 8, 1991, EPA proposed to revise the FIP for Arizona to include emission limits to address the visibility impairment observed in GCNP. The following is a summary of the main issues discussed in the proposal notice.

1. Emission Limitation

The EPA proposed to adopt a continuous SO_2 emission limitation of 0.30 lb/MMBtu. Compliance would be determined on a 30-day rolling average and would be phased in between 1995 and 1999. Because of the uncertainty in determining the improvement in visibility expected as a result of reducing emissions at the NGS, EPA solicited comments on three alternative control strategies for NGS:

a. A continuous SO_2 emission limitation of 0.50 lb/MMBtu. Compliance would be determined on a 30-day rolling average and would be phased in between 1995 and 1999.

b. A continuous SO_2 emission limitation of 0.10 lb/MMBtu. Compliance would be determined on a 30-day rolling average and would be phased in between 1995 and 1999.

c. A January 10, 1991 proposal submitted by SRP under which it would test alternative control technologies, and if one of the technologies met a minimum removal efficiency at a set cost, the NGS would install that technology and operate it in the wintertime.

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[7] The SRP owns 21.7 percent of the NGS project for its own use and benefit, and 24.3 percent for the use and benefit of the United States in accordance with the NGS project agreements. The term "NGS participants" is used in this notice to refer to the parties which have rights and responsibilities associated with the operation of NGS and includes the owners, the operators, and the U.S. Bureau of Reclamation (for the United States).

If none of the technologies met the test criteria, NGS would reduce its emissions by 70 percent (0.30 lb/MMBtu emission limit) measured on an annual basis by the year 2000.

In addition, EPA requested comment on whether another emission limitation or a different averaging period may be more appropriate.

2. Attribution

As part of the February 8, 1991 proposal, EPA reopened the comment period on its September 5, 1989 preliminary finding that several episodes of wintertime impairment in the GCNP was reasonably attributable to NGS. The EPA noted both in the September 1989 and the February 1991 notices that the finding was not based on any single analytical technique in the NPS report on WHITEX, but rather on the collection of techniques performed by the NPS using WHITEX and other data. In detail, EPA explained that all of the techniques used by the NPS support the conclusion that NGS is a source of visibility impairment in the Grand Canyon during certain wintertime episodes. Also, in some detail, EPA discussed the National Academy of Science's (NAS') review of the WHITEX study and discussed other visibility studies performed subsequent to WHITEX.

The National Research Council of the NAS reviewed and reported on the scientific methods used in the WHITEX report. The NAS report, entitled "Haze in the Grand Canyon: An Evaluation of the Winter Haze Intensive Tracer Experiment" (October 1990), contained a qualitative assessment of WHITEX which supported EPA's finding that, on some days, NGS is a source of visibility impairment in the GCNP.[8] Further, the NAS found that the "rate of SO_2 emissions from NGS is easily large enough to serve as the

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[8] The report found, for example, that the detection at Hopi Point (GCNP) of the unique tracer released from NGS in the WHITEX study "is an unambiguous indicator that air parcels containing NGS emissions did impinge on the GCNP on several occasions." Executive Summary at p. 3.

source of the sulfur measured in the GCNP."[9] However, the report also found that the data base and data analyses techniques in the WHITEX report were not, standing alone sufficient to ascertain the quantitative NGS contribution to haze at any given time. The NAS report has been placed in the rulemaking docket.[10]

The SRP has conducted another study known as the Navajo Generating Station Visibility Study (NGSVS). That study attempted to measure the degree of contribution by the NGS to visibility impairment in the GCNP during the 1989-1990 winter season and to assess the level of improvement expected as a result of reducing the SO_2 emissions at NGS. The SRP submitted a draft report describing that study and its results[11] during the public comment period on EPA's February 8, 1991 proposal. The NGSVS concluded that NGS emissions were present at Hopi Point less frequently than during the WHITEX period. In addition, the NGSVS concluded that on days when NGS emissions were present, visibility impairment at Hopi Point associated with those emission was substantially less than the amount calculated in the NPS report on WHITEX. However, results indicate that NGS was responsible for a significant quantity of sulfate and haze during specific visibility impairment episodes in GCNP.

3. BART Analysis

In light of its attribution finding, EPA conducted an analysis in accordance with the BART Guidelines (EPA-450/3-80-009b) and 40 CFR 51.301(c)(4)(iii).[12] That analysis included consideration of the following: the costs of compliance, the energy and non-air

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[9] The NAS report at p. 33.

[10] Additional copies of this report are available from the National Academy Press, 2101 Constitution Avenue, NW., Washington, DC 20410.

[11] Sonoma Technology, Inc., "Navajo Generating Station Visibility Study," Draft Number 2, April 16, 1991.

[12] U.S. EPA, "Draft Report on Best Available Retrofit Technology (BART) Analysis for the Navajo Generating Station in Page, Arizona," January 1990. A copy of this document has been placed in Docket A-89-02A.

quality environmental impacts, any existing pollution control technology in use at the facility, the remaining useful life of the source, and the degree of improvement in visibility anticipated to result from application of controls.

Considering the requirements found in the BART Guidelines, EPA divided its analysis into two major parts. In the first part, EPA identified the SO_2 emission controls that are readily available to the source, the costs of such controls, and other impacts of installing and operating the controls. In the second part of the analysis, EPA attempted to define the source-impairment relationship which was then used to predict the improvements in visual air quality that can reasonably be expected to occur as a result of installing and operating the controls defined in the control technology analysis. Because EPA was faced with some uncertainties in each of the parts of the analysis, EPA bounded its results by giving low and high estimates. A detailed discussion of this analysis for NGS was provided in EPA's February 8, 1991 proposal.

To estimate the cost of controlling the SO_2 emissions at NGS, EPA used the Integrated Air Pollution Control System (IAPCS) cost model to predict the capital and operating cost estimates for 0.10, 0.30, and 0.50 lb/MMBtu control levels.[13] The results from the IAPCS indicated that wet flue gas desulfurization (FGD) achieving a 0.30 lb/MMBtu emission limit for all three units, the control level that was proposed by EPA, was estimated to have total capital cost requirements of between $245.9 million and $402 million with total levelized annual costs (including amortized capital, interest, operating, and maintenance costs) estimated to be between $91.9 million and $128.3 million.[14]

In its February 8, 1991 proposal, EPA also estimated the potential costs to residential electricity customers serviced by the

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[13] Integrated Air Pollution Control System Costing Program, Version 3.0, copyright PEI and Associates, Inc., 1989.

[14] All dollar amounts were measured in 1988 dollars.

NGS participants as well as the potential costs to Central Arizona Project (CAP) customers.

One of the more complicated tasks in the BART analysis was defining the relationship between the SO_2 emissions at NGS and the visibility impairing sulfate in the GCNP. This relationship had to be addressed in order to estimate the degree of improvement in visibility that could be anticipated to result from the use of the alternative SO_2 control systems. Because of the complex terrain in and around the GCNP, EPA defined the source/impairment relationship using the ratio of SO_2 emissions at NGS to sulfate in the GCNP attributable to NGS as found in the final WHITEX report. Using this ratio, EPA then applied a linear rollback model. However, in light of the uncertainties surrounding these analyses EPA considered a broad range of source-impairment relationships. In addition, EPA developed and applied a nonlinearity factor to the rollback model to estimate the improvements in visibility that would result from reductions in SO_2.

Because no single standard method exists for measuring improvements in visibility, the EPA employed two of the most widely used techniques to define the improvements in visibility expected to occur in the GCNP. One of the methods used to estimate the visibility improvements in the GCNP was analyzing the changes in contrast expected to occur as a result of reducing SO_2 emissions at NGS. The EPA stated in the proposal that this method is particularly relevant because human observers use contrast to make judgments of how atmospheric clarity changes with pollutant concentration. The contrast is defined as the percent difference between the brightness of a scenic element and its background. The second technique was to analyze the seasonal average visual range change (see 56 FR 5182 Table 1).

Although not specifically addressed in the BART analysis, the proposal noted that EPA suspected that NGS emissions may contribute to visibility impairment in the GCNP during other seasons of the year and in other Class I areas in the region. Thus,

EPA sought comment on any other potential visibility impairments caused by NGS.

The EPA also noted in the proposal that it was not required as a part of its analysis to estimate monetary benefits associated with improving visibility in the GCNP. However EPA evaluated the monetary benefits in developing a part of the preliminary Regulatory Impact Analysis (RIA) (as required by Executive Order 12291) for the proposed rule.

4. Control of Particulate Matter and Nitrogen Oxides

In the February 8, 1991 proposal, EPA noted that two other pollutants emitted by NGS, NO_x and PM, are known to contribute to visibility impairments in some circumstances.[15] The current emissions of NO_x and PM from NGS were not identified as significantly contributing to the visibility impairment in the Grand Canyon. However, EPA expressed concern based upon its technical judgment regarding the behavior of the pollutants as potential contributors to visibility impairment as a general matter, upon the amount of the pollutants emitted by NGS, upon the proximity of NGS to the GCNP, and upon the characteristics of the NGS plume, as shown by WHITEX and other studies, that increased emissions of these pollutants could result in impairment in the GCNP. The EPA noted that although the NGS is not subject to any NO_x emission limitations, SRP has stated that NGS currently emits NO_x at a rate of 0.4 to 0.5 lb/MMBtu. Therefore, EPA proposed an NO_x emission limit consistent with NGS' existing emission rate, as well as the rate at other similar plants, of 0.5 lb/MMBtu.

The EPA noted that PM emissions for the NGS are currently limited in two ways. The Arizona SIP has both an emission rate limitation of 0.06 lb/MMBtu and an opacity limit of 40 percent for NGS. The SRP has stated that NGS currently emits PM at a rate of 0.03 lb/MMBtu with an opacity of between 10 and 15 percent. Thus, the opacity limit of 40 percent is well above the NGS existing

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[15] See, e.g., BART Guidelines at p. 12-13.

emissions. Therefore, EPA proposed a 20 percent opacity limitation consistent with current NGS emissions in order to preclude any visibility deterioration that would be caused by an increase in PM emissions.

The EPA requested comments on whether NO_x and PM emission limits would be appropriate for NGS.

5. Compliance Schedule

The EPA proposed to require that the emission limitation be achieved in three phases. Specifically, EPA proposed that the final emission limitation would need to be met on one unit by January 1, 1995; on two units by January 1, 1997; and on all three units by January 1, 1999. The EPA solicited comments on whether the phased-in compliance schedule proposed was appropriate as a matter of law or policy, and, as noted, requested comment on the January 1991 SRP proposal that a final emission limitation not become effective before January 1, 2000.

6. Use of Seasonal Controls

Part of the SRP proposal called for the use of seasonal controls. Therefore, EPA solicited comment on the use of seasonal controls. In the February 8, 1991 notice, EPA noted that such controls would have to be both technically and legally justified before they could be used.

7. Other Issues

In the February 8, 1991 proposal, EPA also specifically solicited comments on the following:

a. Use of continuous emission monitoring systems for compliance determinations.

b. Plant-wide averaging of the emission limitations.

c. Other available technologies which can reduce SO_2 emissions at NGS to achieve the proposed or alternative limits and which may require less capital investment and/or operating expenses than those technologies evaluated in the BART analysis.

In addition to soliciting written comments during the comment period, EPA held a public hearing on March 18 and 19, 1991 in

Phoenix, Arizona. A copy of the transcript of the hearing is in Docket A-89-02A. As a result of the comment period and public hearing, EPA received over 400 comments on its proposal. All the comments have been placed in Docket A-89-02A.

Because of the differences in technical opinions expressed and data analyses submitted to EPA during the comment period, EPA sponsored a technical review meeting on April 25 and 26, 1991. The EPA invited the NGS participants and the environmental groups who submitted technical information to EPA to send technical representatives to the meeting to discuss the interpretation of the available data. The meeting was open to the public, and a summary of that meeting is included in Docket A-89-02A.

E. New information After the Close of the Initial Comment Period

After the comment period closed on April 19, 1991, at the recommendation of EPA, representatives of SRP, Grand Canyon Trust (GCT), and EDF met to discuss alternative approaches to EPA's February 8, 1991 proposal. In August 1991, the outside parties reached agreement and together recommended that EPA adopt an alternative control for NGS consisting of a 0.10 lb/MMBtu SO_2 emission limitation (approximate to a 90 percent control level) based on a rolling annual average and phased in by unit in November 1997, November 1998, and August 1999. In addition, under the agreement, NGS would shift its maintenance schedule such that 6 unit-weeks of planned maintenance would occur between November 1 and March 15 each year. Under specific conditions, the Administrator of EPA may allow NGS to shift the maintenance schedule outside of that period or not to conduct scheduled maintenance in a given year.

Representatives of EPA participated in many of the meetings with the parties and provided technical assistance. Representatives of the State of Arizona also attended several of the meetings and provided additional technical support. New technical materials and cost information, including adjustments of the potential control costs, were exchanged between the parties and EPA. Summaries of the meetings and significant conversations in which EPA was

involved and copies of the new material and information which were submitted to or developed by EPA have been included in Docket A-89-02A.

The outside parties memorialized their agreement in an MOU which they submitted to EPA along with recommended regulatory requirements for EPA's final rulemaking action. The SRP estimated (in 1992 dollars) a capital cost of $430 million and a total levelized annual cost of $89.6 million for the parties' recommended alternative. In comparison, SRP estimated a capital cost of $510 million and a total levelized annual cost of $106 million to meet the alternative EPA proposed in February 1991.

Noting that the alterative incorporated in the MOU would provide more visibility protection for the GCNP at a lower cost for NGS and its customers, EPA, on August 8, 1991, reopened the comment period on its February 8, 1991 proposed action (56 FR 38399, August 13, 1991). In the notice, EPA stated that it was giving serious consideration to the control option recommended by the outside parties and incorporated in an appendix to the notice a memorandum from EPA's Office of General Counsel concluding that the outside parties' legal rationale in support of their recommended control option was meritorious.

The EPA reopened the commend period until September 9, 1991. Where addresses were available, commenters on the February 8, 1991 proposal were notified by mail of the reopened comment period in order to facilitate their ability to comment.

The EPA received 21 comments during the supplemental comment period. Eighteen of the commenters supported the alternative incorporated in the MOU, and three opposed it. The SRP, GCT, EDF, the Wilderness Society, the National Wildlife Federation, and the Sierra Club conditionally withdrew their prior comments which were inconsistent with the MOU and associated documents.

II. Today's Actions

In today's action EPA is promulgating its final determination on the attribution to NGS of certain visibility impairment episodes in

GCNP and is promulgating Federal revisions to the visibility implementation plan for Arizona to address those impairment episodes. As discussed below, EPA has concluded that certain visibility impairment episodes in GCNP are traceable to NGS and that NGS is a dominant contributor to certain visibility impairment episodes. The EPA finds today that a 0.10 lb/MMBtu SO_2 emission limitation (approximately a 90 percent emission reduction) based on a rolling annual average and phased in by unit in November 1997, November 1998 and August 1999 in addition to scheduled winter maintenance at NGS affords greater visibility improvements than the alternative advanced in EPA's February 1991 proposal. In particular, it will reduce by two-thirds the amount of pollution allowed under the proposed rule. In addition, EPA finds that the final rule will be significantly less costly than the proposal. Consequently, EPA further concludes that today's final action will provide a greater degree of "reasonable progress" toward the national goal of remedying such impairment than would be provided by the February 1991 proposal (see section 169A(b)(2) of the Act, 42 U.S.C. 7491(b)(2)).

In EPA's August 1991 supplemental notice requesting comment on the rulemaking alternative largely adopted in final form today, the Agency noted that SRP, GCT, and EDF had recommended that the legal rationale in support of this alternative be the requirement in section 169A(b)(2) of the Act that implementation plan revisions addressing visibility impairment achieve "reasonable progress" toward the national visibility goal. The supplemental notice also indicated that EPA's Office of General Counsel had reviewed the matter and concluded, subject to any significant points that may be raised in the reopened comment period, that EPA could rely on the reasonable progress provisions as the basis for this alternative. No significant adverse comments addressing the legal basis were received. Accordingly, EPA is adopting this rationale as discussed in the supplemental notice.

Today's action is based upon the material in the docket including EPA's review and consideration of all comments received

during the comment periods and at the public hearing. The agreement between GCT, EDF, and SRP and associated recommendations to EPA, largely adopted in final form today, also are in the docket. The EPA has responded to all of the significant comments received. Some responses are provided later in today's notice. Additionally, EPA has prepared a document accompanying today's action. "Response to Public Comments: Proposed Revisions to Arizona Visibility FIP for Navajo Generating Station," which responds to comments. This document has been placed in Docket A-89-02A.

A. Impairment Traceable to NGS

The EPA regulations promulgated on December 2, 1980 ([r]equire the control of impairment that can be traced to a single existing stationary facility or small group of existing stationary facilities . . ." (45 FR 80085). Accordingly, EPA's regulations currently cover existing sources where the impairment is traceable or "reasonably attributable" to that source by visual observation or other techniques deemed appropriate by the State (Phase I impairments). The EPA, acting for the State under section 110(c) of the Act, deems the techniques in the WHITEX report, the NGSVS report, and other data and analyses in the docket as appropriate techniques for determining reasonable attribution in this case for the following reasons.

1. The unique tracers, deuterated methane used in the WHITEX study and perfluorocarbons used in the NGSVS, injected into the emissions of NGS were observed in substantial quantities at Hopi Point during periods of episodic visibility impairment.

2. The NGS is the predominate source of SO_2 in the region.

3. SO_2 released by a power plant converts into sulfates through chemical transformation in the atmosphere.

4. Meteorological data show that the NGS plume easily can, and frequently does, travel to GCNP.

5. The data and analyses in the docket show that sulfates are the major contributor to visibility impairment in GCNP.

The EPA recognize that NGS is not the only source of visibility impairment at GCNP. Under the applicable statutory provisions and regulations, however, this is not determinative[16] (see generally section 169A of the Act and 40 CFR 51.300 307). Moreover, even though WHITEX and NGSVS contain some scientific uncertainty, they are technically adequate for the regulatory purposes at hand, as they both showed that episodes of visibility impairment in the GCNP can be reasonably attributed to NGS. Accordingly, EPA concludes today that certain visibility impairment episodes of the GCNP are traceable to NGS, and NGS is a dominant source of those impairments. Notwithstanding that other sources also may contribute to those impairment episodes at GCNP. EPA concludes that the addition of emissions controls at NGS alone will result in a significant improvement in visibility at GCNP and will make "reasonable progress" toward meeting the national visibility goal.

B. Control Technology

As part of the BART analysis [17] for the February 1991 proposal, EPA reviewed the available control technologies as well

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[16]For example, under section 169A(b)(2) of the Act, EPA is authorized to require visibility implementation plans containing "emission limits, schedules of compliance and other measures" necessary to make reasonable progress toward meeting the national visibility goal (see also 40 CFR 51.302(c)). The national visibility goal, in turn, calls for the remedying of "any" manmade visibility impairment in Class I areas (see section 169A(a)(1) and 40 CFR 51.300(a)). As noted, EPA's regulations implementing section 169A address visibility impairment that is reasonably attributable to a single source or small group of sources and deferred action on complex problems such as regional haze (see generally, 45 FR 80084 (December 2, 1980)). Accordingly, as provided in the 1980 regulations, EPA may remedy through emission limits, schedules of compliance, or other measures "any" visibility impairment that is reasonably attributable to an existing stationary source or small group of sources (*see also* section 169A(c) of the Act and so CFR 51,303 (authorizing an exemption from control requirements only where a plant does not "by itself or in combination with other sources" omit pollution "which may reasonably be anticipated to cause or contribute to significant impairment of visibility" in any Class I area and affirms by negative inference, EPA's broad rulemaking authority)).

[17]U.S. EPA "Draft Report on Best Available Retrofit Technology (BART) Analysis for the Navajo Generating Station in Page, Arizona," January 1990.

as the environmental impact of the use of such technologies and the estimated costs of installing and operating such equipment. In today's action, EPA is not requiring the use of any particular control technology. Rather, EPA is establishing an emission limitation and NGS has the discretion to select and install the type of control system which best meets its needs. The available information in the docket indicates that a wet FGD system will be the economically proven control technology for meeting the 0.10 lb/MMBtu emission limitation at NGS.

As a result of new information provided by SRP, EPA has revised and updated its cost estimates for the installation and operation of a wet FGD system. The revised estimated capital cost and total levelized annual cost to meet the emission limitation EPA proposed in February 1991, in 1992 dollars, are $510 million and $106 million, respectively. The estimated capital cost and the total levelized annual cost, in 1992 dollars, to meet the emission limitation promulgated today, are $430 million and $89.6 million, respectively. Although not considered in these cost estimates, EPA expects that NGS will be able to recoup a portion of the control costs by the sale of marketable allowances which it will receive as part of the allowance trading program that EPA is establishing under Title IV of the Act.

Based on the information submitted during the comment period by SRP and Nevada Power Company (NPC) and the above cost figures, EPA has estimated that the average SRP and NPC customers electric bills will increase approximately $1.72 and $1.57 per month, respectively. The customers of the other utilities will have smaller increases in their electric bills. Commenters representing CAP customers submitted information showing that water costs would increase between $4.10 and $4.50 per acre foot based on EPA's February 1991 proposal. Since the cost figures for the final action are lower than the figures used for these estimates, the increase in water costs for the CAP customers is expected to be less than $4.10 to $4.50 per acre foot.

C. Control Strategy

The EPA has adopted the combination of a higher level in control; compliance phased in by unit in 1997, 1998 and 1999; an annual averaging period; and scheduled winter maintenance as a control strategy for NGS -- the alternative recommended to the EPA by GCT, EDF, and SRP and identified in EPA's August 1991 supplemental notice -- because it better addresses the visibility effects of concern at a lower cost than the proposal in EPA's February 1991 notice. As highlighted here and elsewhere, the control strategy for NGS must be viewed as a whole and not as severable parts. The EPA has carefully weighed the relevant statutory and regulatory considerations and concluded that, taken in its entirety, today's control strategy for NGS will provide a greater degree of reasonable progress toward the national goal at a lower cost than EPA's February proposal.

Essentially, the SO_2 emissions from NGS can contribute to two types of visibility impairment. The major impact of NGS is its dominant single source impact during certain episodic visibility impairment events, usually during the winter. This impact has been observed in winter studies (WHITEX and NGSVS) as well as intense aerosol monitoring within the canyon since 1988.[18] The other concern addressed by the control strategy in today's action is the less intense impairments which occur at the GCNP during seasons other than winter, and occur at other nearby mandatory Class I Federal areas.[19]

The lower level of NGS SO_2 emissions required by the 0.10 lb/MMBtu emission limitation adopted today will afford GCNP greater protection from episodic events than an emission limitation

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[18]See Docket A-89-02A, specifically items IV-D-164 and IV-D-375.

[19]See, e.g., Latimer, Douglas, "Haze Impacts on the Golden Circle of National Parks of Sulfur Dioxide Emission from Navajo Generating Station: Haze Puff Model Calculations for 1988-90."

which allows significantly more SO_2 emissions but is averaged over a shorter period, such as the 0.30 lb/MMBtu emission limitation proposed by EPA in its February 1991 notice. The probability of high NGS contribution to severe episodic sulfate impairment events is limited by the known design reliability of current technologies which will achieve the required 0.10 lb/MMBtu emission limitation as well as the scheduled winter maintenance requirement. Thus, EPA believes that despite the use of an annual averaging time, the significant increase in control level, expected reliability of the control technology, and winter maintenance, taken together will, for the most part, prevent continuation of severe winter episodes caused by NGS. At the same time, the annual average lowers the costs of compliance.

With respect to the long-term potential visibility impacts on the Golden Circle area (the other Class I areas in the Colorado Plateau), there is little doubt that the lower emission rate over a year's average will reduce NGS' contribution to sulfate formation and thus to sulfate-caused impairment more than the control level proposed by EPA in February 1991. Given NGS' central location in relation to many Class I areas, no matter what meteorological events occur over a multi-year period, it is likely that the sulfates originating from NGS and transported to surrounding Class I areas will be reduced in proportion to the difference in emission limitations, i.e., to one-third of the levels in the February 1991 proposal.

Further, during the comment period on the February 1991 proposal, EPA received technical information suggesting that NGS contributes to visibility impairment at GCNP in non-winter seasons.[20] For the reasons just discussed, the significant lower emission rate required today will, over the long-term, curb NGS' contribution to any visibility impairment in the GCNP during seasons other than winter to a greater degree than EPA's proposed option.

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[20]See Docket A-89-02A, item IV-D-171, and season control discussion below.

Accordingly, the control scheme adopted today for NGS is appropriate for addressing the winter episodic visibility impairment observed at the GCNP and will also reduce any long-term, long-range impairment that NGS emissions may contribute to during other seasons at GCNP and at other nearby Class I areas.[21]

D. Emission Limitation

After reviewing the option recommended by SRP, EDF, and GCT in their MOU, EPA has determined that such a control strategy will provide a substantially greater degree of emissions reduction, and a correspondingly greater degree of visibility improvement at a substantially lower cost than the alternative proposed in February 1991.[22] For these reasons, EPA also concludes that this option will make additional reasonable progress towards attainment of the national visibility goal in comparison to the February 1991 proposal. Thus, in today's action EPA is promulgating an SO_2 emission limitation of 42 ng/J (0.10 lb/MMBtu) heat input to be phased in by unit in November 1997, November 1998, and August 1999, with compliance determined on a rolling annual average basis.

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[21] As noted, section 169A of the Act establishes a national visibility goal, not an air quality standard or a specific emission standard. While the objective is to attain the goal, EPA's only mandate from Congress is to make reasonable progress toward the goal. For these reasons, EPA has more flexibility in selecting a control strategy to meet the visibility reasonable progress requirements than it does when a health-based air quality standard or specific emission standard must be met. Thus, in determining reasonable progress, EPA, by law, must consider the costs of compliance, the time necessary for compliance, and the energy and non-air quality environmental impacts of compliance (see section 169A(g)(1) of the Act). Consideration of the pertinent statutory scheme and these specific factors has informed several aspects of today's action. Thus, for the policy and legal reasons stated, an annual rolling average emission limitation is acceptable for this case. Moreover, while this emission limitation is not expected to interfere with attainment of any other requirement of the Act, its adoption does not relieve NGS of any responsibility for meeting any air quality standard, emission standard, or other requirement of the Act.

[22] In the August 1991 supplemental notice, EPA published and requested comment on the parties' August 8, 1991 MOU and associated documents. During the public comment period, the parties further clarified their agreement and submitted a revised version of their MOU and recommended regulatory requirements to EPA, both documents dated August 22, 1991.

Under today's final action, compliance with the annual rolling average will be determined by computing a weighted plant-wide average of the SO_2 emission rate based on the daily SO_2 emission rate and the electric energy generated for the previous 365 "boiler operating days" for each unit.[23] The EPA was concerned that the plant-wide average reflects the actual release of emissions at the plant. Therefore, after discussion with representatives of SRP, GCT, and EDF, EPA settled on a methodology that appropriately weights the emissions from each unit before calculation of the plant-wide average. The EPA has used the daily electric energy generated as a weighting factor because that information is readily available for each unit and in this case is proportional to the heat input to the boilers. Specifically, compliance will be determined as follows:

1. For each unit that has accumulated at least 365 boiler operating days since the passage of the starting date applicable to it, the plant must measure and record the SO_2 emission rate and the electric energy generated on each boiler operating day. The SO_2 emission rate will be computed using the date from the required continuous emission monitoring system for the unit and using method 19, appendix A, 40 CFR part 60. The electric energy generated, in megawatt-hours, will be recorded from the megawatt-hour meter for the unit.

2. For each unit, the previous 365 boiler operating days will be identified.

3. For each such day, the product of the SO_2 emission rate and the electric energy generated will be computed.

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[23] A "boiler operating day" is specific for each steam-generating unit at NGS and is defined as a 24-hour calendar day (the period of time between 12:01 a.m. and 12:00 midnight in Page, Arizona) during which coal is combusted at that NGS unit for the entire 24 hours." This definition is consistent with the definition for "boiler operating day" in 40 CFR 60.41a: "a 24-hour period during which fossil fuel is combusted in a steam-generating unit for the entire 24 hours." The EPA notes that the set of previous 365 boiler operating days for each unit will be unique to that unit and thus the same set of calendar days probably will not be used for all three units in determining compliance.

4. The 365 products for each unit will be added.

5. The electric energy generated for the 365 boiler operating days for each unit will be added.

6. The sums of the product of the SO_2 emission rate and the electric energy generated will be divided by the sum of the electric energy generated to produce a plant-wide weighted annual average SO_2 emission rate for comparison with the emission limitation to determine compliance.

Recording and computation of the daily electric energy generated and SO_2 emission rates will commence on:

1. November 19, 1997 for the first unit.

2. November 19, 1998 for the second unit.

3. August 19, 1999 for the third unit.

The NGS has the discretion to determine which of its three units will be controlled first and second.

In the discussion below, EPA has recognized that certain difficulties encountered during the first year of operation of a control system or the catastrophic failure of a control system may, based on EPA's judgment, warrant a limited exclusion from compliance with the emission limitation. However, as discussion below indicates, the control system, as a general matter, must be optimally operated consistent with good engineering practices to keep emissions at, or below, the emission limitation.

For each unit, in determining compliance with the annual average emission limitation during the first year. of operation of the control equipment installed to comply with this emission limitation, periods during which one of the following conditions are met will be excluded:

1. Equipment or systems do not meet designer's or manufacturer's performance expectations.

2. Field installation including engineering or construction precludes equipment or systems from performing as designed.

The periods during the first year to be excluded will be determined by the Administrator based on periodic reports of

compliance with this emission limitation which must identify the times proposed for exclusion and provide the reasons for the exclusion, including the reasons for the outage of the control system. The report also must describe the actions taken to avoid the outage, to minimize its duration, and to reduce SO_2 emissions at the plant to the extent practicable while the control system was not fully operational. Whenever the time to be excluded exceeds a cumulative total of 30 days for any control system, the NGS owner or operator must file a report within 15 days addressing the history of, and prognosis for, the performance of the control equipment.

In addition to the foregoing, the Administrator will exclude from the compliance determination for a unit any periods of emissions from a unit for which the Administrator finds that the control equipment is out of service because of catastrophic failure of any control system which occurred for reasons beyond the control of the NGS participants and operators and could not have been prevented by good engineering practice. The Administrator will not exclude the period if the equipment failure was a consequence of a lack of appropriate maintenance; of intentional or negligent conduct or omissions of the NGS participants or operators or the control system design, construction, or operating contractors.

The final regulation requires that all equipment needed to comply with this regulation to be optimally operated consistent with good engineering practice to keep emissions at or below the emission limitation. The regulation also requires that following any control system outages, the system must be returned to full operation as expeditiously as practicable.

The final regulation provides that continuous emission monitors must be installed to determine compliance with the emission limitation. This equipment must meet the specifications listed in appendix B of 40 CFR part 60, the quality assurance procedures in appendix F of 40 CFR part 60, and the requirements for estimating emission rate in ng/J or (lb/MMBtu) set out in method 19, appendix

A, 40 CFR part 60.[24] The NGS is required to report emissions and maintain records in accordance with the procedures in 40 CFR 60.7. In addition, EPA is establishing special notification procedures when an outage of a control system occurs. The NGS must notify the Administrator by telephone or by writing within one business day of any outage of the control system needed for compliance with the emission limitation and must submit a follow-up written report within 30 days of the repairs stating how the repairs were accomplished and justifying the amount of time taken for the repairs.

In the February 1991 notice, EPA proposed new NO_2 and opacity limits on NGS emissions consistent with current emission levels. These were proposed due to a concern that certain SO_2 emission control equipment would cause increases in NO_2 and PM (which are limited by opacity limitations) emissions at NGS which could affect visibility in GCNP. However, EPA does not have any evidence at this time that NO_2 or PM emissions from NGS contribute significantly to visibility impairment in the GCNP. Further, the technology agreed to in the MOU will not increase NO_2 or PM emissions from NGS. Moreover, the docket does not contain any evidence that NO_2 or PM emissions from NGS would cause any such impairments after compliance with the final limitations promulgated today. Thus, EPA finds no need to include additional emission limitations for these pollutants.

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[24] For certain requirements in today's action (e.g., monitoring, reporting, recordkeeping, etc.), EPA has relied on its regulations governing standards for performance for new stationary sources. These regulations have been relied on because they contain standardized procedures and requirements which apply to coal-fired steam-generating units. In addition, EPA has provided that the NGS owners or operators must comply with the requirements relied on in 40 CFR part 60 as in effect today. This approach was agreed to and recommended to EPA by SRP, GCT, and EDF in their August 22, 1991 MOU and associated documents. At this time, EPA believes that reliance on the regulations as they currently exist is reasonable in that they appear to provide adequate technical methods and procedures for determining and monitoring compliance with the SO2* emission limitation established today.

E. Source/Impairment Relationship

In the February 1991 proposal, EPA estimated seasonal visual range changes which were based on a simple rollback model applied to average NGS contribution during the entire WHITEX study period. Based on this model, a 0.10 lb/MMBtu SO_2 emission limitation on NGS should result in an approximate 14 percent improvement in seasonal average standard visual range at Hopi Point.

During the comment period on EPA's February 1991 proposal, SRP submitted the results and analyses of the NGSVS which included estimates of NGS' contribution to visibility impairments in GCNP and specifically focused on Hopi Point. The NGSVS data indicate that controlling SO_2 emissions from NGS would result in at most 2 percent improvement in the seasonal average standard visual range.[25]

Another study[26] submitted during the comment period, which was based on modelling of NGS' emissions over a long time period, indicated average wintertime improvements in the range of 4 to 8 percent if NGS emissions are reduced. This study is not based on any specific monitoring period nor was it based on an EPA-approved model.

The two intensive studies, WHITEX and NGSVS, included detailed aerosol, wind flow, and tracer analyses. They represent snapshots of NGS' impacts for their respective study periods. Based solely on wind-flow analysis during these periods, these studies varied significantly in concluding how often NGS emissions would be transported directly to the Hopi Point, the common GCNP monitoring site for both studies.

The major change in the seasonal average visibility results from more dramatic improvements expected to occur as a result of

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[25] Average of the total light scattering to that part apportioned to NGS over the entire study period as found in appendix C of the NGSVS, Final Report Draft Number 2. Sonoma Technology, Inc., April 10, 1991.

[26] See Docket A-89-02A, item IV-D-171.

reducing emissions from NGS during certain meteorological conditions. Recent measurements of peak winter sulfate levels in the canyon approach four times the average winter levels. For certain periods analyzed in WHITEX and in NGSVS, NGS was shown to be the dominant contributor (more than 50 percent) to sulfates measured at Hopi Point. If certain humidity and wind conditions occur during the period when very high sulfate episodes are formed, reducing NGS emissions could result in increases in standard visual range up to 300 percent. Given the variability in meteorological conditions throughout the winter and from one winter to the next, it is impossible to exactly quantify the peak episodic expected improvement for any given period.

Photographic data taken during WHITEX indicated that airflow below the rim of the canyon could result in higher visibility impairment due to trapping of pollution. As a result, a new aerosol monitoring site at Indian Gardens (4,000 feet below the rim of the canyon) was established after the WHITEX study. This site has provided information since 1988 which confirms that the transport and conversion processes below the rim of the canyon are sometimes decoupled from the processes above the rim. Both NGSVS and the NPS report on WHITEX used the Hopi Point site, which is above the rim of the Canyon, as the basis for determining the NGS impact on GCNP. Data submitted during the comment period show that visibility below the rim is impaired more often and to a greater degree than is the visibility above the rim at Hopi Point.[27]

Taking into account the conclusions from both studies as well as other monitoring information at GCNP from long-term monitoring, EPA expects that reducing SO_2 emissions from NGS to 0.10 lb/MMBtu should improve the winter seasonal average visibility above the rim of the canyon approximately 7 percent principally due to improvements during episodes. Analyses of peak in-canyon sulfate levels during winter inversion episodes also lead

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[27] See Docket A-89-02A, items IV-D-164, IV-D-346, and IV-G-3.

EPA to conclude that reductions in NGS SO_2 emissions may well contribute to greater episodic visibility improvement resulting in, as discussed above, more than a 7 percent improvement in the seasonal average visibility below the rim of the canyon. However, EPA did not quantify the expected visibility improvement below the rim of the canyon due to the limited amount of data and understanding of the air transport mechanisms below the rim of the canyon.

F. Schedule of Compliance

As noted above, compliance with the emission limitation will be phased-in by unit on the following schedule:

1. One unit by November 19, 1997.
2. Two units by November 19, 1998.
3. All units by August 19, 1999.

The phasing in of the emission limitation will allow NGS to initiate operation of the control systems one at a time.

To ensure that NGS complies with the emission limitation by the dates specified, EPA has established a schedule of compliance containing interim deadlines as follow.

Date of binding contract for architectural/ Engineering firm to design and procure the control system needed for compliance.	June 1992
Start of onsite construction of the control system for the first unit.	Jan. 1995
Initiation of startup testing:	
First unit	May 1997
Second unit	May 1998
Third unit	Feb. 1999

The Administrator may extend the interim deadlines if NGS can demonstrate that compliance with the final deadlines for compliance, stated above, will not be affected.

G. Maintenance Schedule

The final regulation provides that by March 16, 1993, and every March 16th thereafter, the NGS owner or operator will

prepare a long-term maintenance plan for NGS that maximizes winter down-time while accommodating the maintenance requirements for the other generating facilities on the NGS grid. The plan will cover the period from March 16 to March 15 of the next year and must provide at least a full 6 unit-weeks of maintenance for NGS in the November 1 to March 15 period, except as provided below, to further reduce SO_2 emissions during the winter. The plan will be developed as to be consistent with the criteria established by the Western States Coordinating Council of the North American Electric Reliability Council to ensure adequate reserve margin. The full 6 unit-weeks of winter maintenance need not occur if any of the following circumstances arise.

1. There is no need for 6 unit-weeks of scheduled periodic maintenance in the March 16-March 15 year covered by the plan.

2. The reserve margin on any electrical system served by NGS would fall to an inadequate level, as defined by the criteria referenced above. In such case the scheduled maintenance may be moved out of the November 1 to March 15 period.

3. The cost of compliance with this provision would be excessive. Costs of compliance would be considered excessive when the economic savings to the participants of moving NGS' maintenance out of the November 1 to March 15 period exceeds $50,000 per unit-day of maintenance moved.

4. A major forced outage at a unit occurs outside the winter months, and necessary periodic maintenance occurs during the period of forced outage.

The NGS owner or operator must demonstrate to the satisfaction of the Administrator that one or more of the events listed above render unnecessary or unreasonable a full 6 unit-weeks of scheduled maintenance during the specified winter period. Where 6 unit-weeks of scheduled maintenance is unnecessary or unreasonable, the NGS owner or operator must nevertheless make best efforts to conduct as much scheduled maintenance as practicable during the winter period. If NGS does not conduct its scheduled

winter maintenance (up to 6 unit-weeks), it must report to EPA why it did not do so.

When maintenance is being conducted on a unit, the unit will not be in operation and therefore not emitting SO_2. Thus, the shifting of NGS maintenance to the wintertime period will further reduce NGS SO_2 emissions during the period when NGS is suspected to have its greatest impact on the GCNP. Further, because the scheduled winter maintenance requirement will be implemented in the winter of 1993-1994, it will have the effect of making a degree of reasonable progress toward the national visibility goal before final compliance with the emission limitation is required. Because NGS must, for normal operation, conduct this maintenance, rescheduling it in the wintertime period should have little economic impact on NGS.

H. Air Quality Review

The installation and operation of a wet FGD control system at NGS (the proven available technology that EPA anticipates will be used) will lower the exhaust gas temperature from the stacks and could reduce the plume rise above the NGS stacks. The EPA and the Arizona Department of Environmental Quality reviewed the need to reheat the exhaust gases to ensure appropriate plume rise with the lower gas exit temperatures associated with meeting a 0.10 lb/MMBtu emission limitation using wet FGD and found that reheating of the exhaust gas will not be necessary to prevent a violation of any national ambient air quality standards. If the exhaust gas is not reheated, the control cost will be reduced significantly.

If NGS were to select a wet FGD SO_2 control system, the water content of the plume would increase. Under certain conditions, a white steam plume will occur as the water vapors condenses before it dissipates. This steam plume may be visible near the stack. However, it will not cause any visibility impairment in GCNP or surrounding mandatory Class I Federal areas and will not interfere with the attainment of any national ambient air quality

standards. Such steam plumes are not subject to any State or Federal visual emission standards or regulations.

III. Response to Comments

The September 5, 1989, February 8, 1991, and August 13, 1991 notices requested comment on a variety of issues relating to attribution of impairment, cost of controls, and the benefit expected from the controls. In addition, EPA held a public hearing on March 18 and 19, 1991 during which EPA received comments on its February 1991 proposal.

Under section 307(d) of the Act, today's action must be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period. The EPA has carried out this duty. Moreover, modifications to the proposed rule have been made in response to public comments. The EPA's final control strategy for NGS largely embodies pubic comments received from representatives of GCT, EDF, and SRP which, in turn, were subject to public comment (see, e.g., 56 FR 38399 (August 13, 1991)). Further, in its February 1991 proposal, EPA requested comment on several control options including, but not limited to, the following rule elements and specific regulatory alternatives:

1. Emission limitations, including limitations ranging between 0.50 and 0.10 lb/MMBtu.

2. Averaging times, including a 3-hour, 30-day, and annual averaging period.

3. Implementation schedules, including one providing for plant-wide compliance by the year 2000. As noted below, EPA received many comments in response to the February 1991 proposal supporting, in part, the control elements adopted by EPA, in total, today. For example, many citizens and representatives of environmental organizations submitted comments supporting a 0.10 lb/MMBtu emission limitation, the emission limitation adopted today. Many representatives of industry and business submitted comments supporting an annual averaging period and a long compliance schedule.

During the initial public comment period, EPA received over 400 comments including the public hearing transcript. A summary of the significant comments, criticisms, and new data submitted in written or verbal presentations during the public comment period and EPA's responses are provided below and in supporting documents which have been placed in Docket A-89-02A.[28], [29]

During the supplemental comment period, EPA received 21 additional comments. Two commenters objected to requiring any additional pollution controls on NGS because of the uncertainty in the impairment attribution. Eighteen commenters generally supported the adoption of a control strategy consistent with the MOU, although one commenter expresssed [*sic*] some concerns about the compliance schedule and exemption from winter maintenance. One commenter objected because of the delayed compliance and the level of control.

The SRP, GCT, EDF, the Wilderness Society, the National Wildlife Federation, and the Sierra Club have conditionally withdrawn prior comments that are inconsistent with the August MOU entered by representatives of SRP, GCT, and EDF and associated recommendations to the Agency. In light of this withdrawal, some of the comments discussed here and in the supplementary response to comments documents placed in the rulemaking docket are no longer pending before the Agency and, clearly, no longer "significant" within the meaning of section 307(d) of the Act. Nevertheless, EPA has discussed them in order to help the public better understand today's action.

A. Attribution

The EPA received a large number of comments on its attribution of visibility impairment in the GCNP to NGS. These comments expressed a variety of opinions including statements that

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[28] JCM Environmental, "Summary of Public Comments, Proposed Revision to Arizona Visibility FIP for Navajo Generating Station" July 1991.

[29] See U.S. EPA, "Response to Public Comments, Proposed Revisions to Arizona Visibility FIP," September 1991.

EPA had already made an attribution decision and that EPA should not revisit that decision, that more than adequate information was available to make such a decision and that it is clear from the record that certain visibility impairment episodes in GCNP are attributable to NGS, that EPA should not make a decision to attribute the impairment to NGS until it developed a strong source-impairment relationship, and that EPA should not attribute the impairment to NGS since it is not the sole cause of the impairment in the GCNP. In its February 1991 proposal, EPA reopened its comment period on and explicitly requested public comment on its preliminary attribution decision. Therefore, EPA's proposed attribution decision was subject to public comment. As explained earlier, EPA has reviewed the available technical data and analyses and has concluded that episodic visibility impairment in GCNP is reasonably attributable to NGS.

B. Source-Impairment Relationship

Once EPA attributed impairment to NGS, it then had to develop a source-impairment relationship in order to estimate the expected improvements in visibility resulting from the installation of the controls.

In the February 1991 proposal, EPA provided calculations of the relationship between reductions in SO_2 emissions from NGS and the visibility at the GCNP. The calculations were based on the overall findings of the WHITEX report which used several techniques to apportion NGS' contribution to sulfates and the resulting haze at GCNP. The EPA calculated two measures of visibility improvements, one seasonal average change in standard visual range and the other a distribution of days where control of NGS would result in several levels of contrast changes. The EPA received several comments that its calculations used to estimate the distribution of days when the reduction in SO_2 emissions from NGS would result in perceptible, quite noticeable, and very apparent change in contrast in GCNP were in error because the final contrast assessment did not take into account natural (Rayleigh) atmospheric scattering of light. The EPA agrees that these calculations did not

take into account Rayleigh scattering. However, EPA's seasonal visual range estimated in the February 1991 proposal, did not include error as some commenters had alleged and is relied on in today's action.

The EPA has received new information during the comment period which has improved its understanding of the source-impairment relationship. Based on this and other available information, EPA has refined the source-impairment relationship and concluded that it is as described in the Source-Impairment discussion in "Today's Action" above.

C. Emission Limitation

Individuals and groups that commented on the emission limitation generally requested that EPA adopt a requirement for the maximum level of control or no controls at all. No commenters supported the 50 percent control level. Some commenters supported an SRP proposal, now withdrawn, which called for a 70 percent level. Most commenters on the emission limitation supported a 90 or 95 percent control level. The commenters that did not support controls did so because of the cost of the controls and/or the alleged lack of a strong demonstrated source-impairment relationship. As discussed, EPA believes that an adequate source-impairment relationship does exist for EPA to require NGS to control its emissions. The control strategy that EPA is promulgating today will provide a 90 percent reduction in the SO_2 emissions from NGS at a cost below that which would have been necessary to meet the control strategy EPA proposed in February 1991. Thus, the control strategy adopted by EPA satisfies both groups of commenters in that it will result in a greater emission reduction at a lower cost. Further, as noted previously, EPA must balance a number of factors in taking action today under section 169A. Such action must be balanced in light of EPA's statutory mandate set out in section 169A to make "reasonable progress" toward the national goal of "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from man-made air pollution." The EPA

carefully has weighed, for example, the estimated cost of compliance with today's emission limitation and the visibility benefits expected to be realized and concluded that today's control strategy, taken together, is a reasonable exercise of its delegated rulemaking authority under section 169A.

D. Averaging Time

Several commenters supported a short (3-hour) averaging time stating that it would ensure that maximum visibility protection. Some of these comments have been withdrawn. Other commenters supported a longer (30 days to annual) averaging time stating that it would eliminate the need for expensive backup control equipment. The EPA's adoption of the control strategy, which includes an annual rolling average emission limitation, will eliminate the need for the backup equipment. However, the control strategy also includes a stringent emission limitation and winter maintenance scheduling to ensure maximum visibility protection.

E. Compliance Schedule

Several commenters noted that section 169A of the Act requires that BART emission limitations be met within 5 years. Some of the commenters have since withdrawn these comments. Others commented that it was legally permissible for compliance with a BART emission limitation to extend beyond 5 years. In EPA's August 1991 notice reopening the comment period, EPA published a memorandum from its Office of General Counsel that described the legal basis for the 1997, 1998, and 1999 compliance schedule adopted today. No adverse comments addressing the legal basis were received during the supplemental comment period. Therefore, as discussed in the August 1991 notice, EPA is relying principally on the reasonable progress requirements of section 169A(b)(2). The requirements of that section, which encompasses both the long-term strategy and BART provisions, are met by today's action.

F. BART Guidelines

In the February 1991 proposal (56 FR 5178 col. 1), EPA requested comments on two potential revisions to the BART Guidelines. First, EPA requested comment on the continued use of

the new source performance standards as a base for the BART analysis. Second, EPA requested comment on whether it should include the consideration of the value of marketable allowances when estimating the cost of control systems. The EPA received several comments on both issues. However, in making its final determination on today's action, neither of these issues were significant. Therefore, EPA is not making a final decision on whether to revise the BART Guidelines at this time.

G. Cost of Controls

Several commenters alleged that EPA may have overestimated the economic impact of the controls. They also noted that costs are quite small when divided up among the various consumers. Other commenters alleged that the increased cost will have a significant impact on the consumers. The EPA has recalculated the cost of the controls of today's final action based upon the new information provided by SRP. Those numbers may be overestimates of the actual cost of control. Even if the actual control costs are consistent with SRP and EPA estimates, as noted, EPA has concluded that today's action achieves greater visibility benefit at less cost than EPA's February 1991 proposed option. Moreover, by balancing the estimated costs, expected visibility improvement, and other relevant factors EPA has concluded that the expected improvements in the visibility in the GCNP justify the estimated costs.

Several commenters noted that the recipients of CAP water face a greater price increase than electricity customers or will otherwise bear a significant economic hardship as a result of the control costs of today's action. As discussed in the Regulatory Flexibility Act (RFA) section below, EPA cannot estimate every potential indirect cost of today's action. Nevertheless, EPA has carefully considered the potential impacts of today's action on recipients of CAP water, including farmers receiving such water. The Central Arizona Water Conservation District (CAWCD) submitted an estimate of a 7 percent to 10 percent increase in agricultural water rates, resulting in an increased water cost of nearly $10,000 per year for a typical family farmer. The EPA estimates such an increase would be less

than a 2 percent increase in the total variable costs of a typical farm. At the present time, agricultural water in Arizona receives a substantial Federal subsidy. Current Federal policy calls for phasing out the water subsidy. When the subsidy is eliminated, the impact of the increased cost at NGS will be an even smaller percentage of both total variable cost and total water cost. The EPA has weighed and balanced the costs of today's action, the expected visibility improvement, and other requisite considerations and concluded that today's control strategy, taken together, constitutes a reasonable exercise of EPA's delegated rulemaking authority under section 169A of the Act.

H. Impacts on Other Class I Areas

Several commenters noted the impact of NGS on the other class I areas in the region known as the "Golden Circle." Two of the commenters provided photographs and modeling to support their statements. The EPA agrees that NGS could contribute to the visibility impairment in those other areas, but the data and modeling that were presented were not adequate for EPA to use in making a definitive determination on attribution of the impairment in those areas to NGS. However, the controls that are being required today will significantly reduce if not eliminate NGS' contribution to the visibility impairment in those areas.

I. Seasonal Controls

In the February 1991 proposal, EPA requested comment on whether, as a policy matter, it should allow seasonal controls at NGS and whether, if technically justified, seasonal controls would be legally permissible. Several commenters recommended that EPA adopt a control strategy for NGS that include seasonal controls and/or commented that seasonal controls could lawfully constitute an emission limitation representing BART under section 169A. Several others commented that the technical record did not support seasonal controls and/or commented that as a legal matter seasonal controls could not constitute an emission limitation under section 169A. During the comment period, the GCT and its consultants presented analyses, which are in the rulemaking docket,

demonstrating that NGS' emissions may significantly impair visibility year-round at the GCNP as well as other Class I areas in the region. For example, a simple transport and transformation model of NGS emissions over a 5-year period indicated impacts at GCNP in seasons other than winter. While the degree of visibility impairment during these impacts is less than those documented by other studies during the winter period, the impacts are nevertheless strongly suggestive of attributable impairment in non-winter seasons. Further, the analyses suggest that NGS emissions could impair visibility in surrounding Class I areas between 60 and 80 percent of the time year-round. For the foregoing reasons, EPA concludes that year-round controls are appropriate in this action. The EPA's decision also is consistent with the recommendations of the parties. While EPA's regulations do not cover regional haze effects from existing sources, EPA also notes that today's action will lead to regional haze benefits as well. Therefore, EPA need not determine whether such controls would be legally permissible.

J. Monetary Benefits

In the February 1991 proposal, EPA noted that it was not legally required to estimate the monetary benefits associated with improving visibility in the GCNP. However, as a check of the reasonableness of its approach, EPA evaluated and considered the benefit analysis developed as a part of the draft RIA for the proposed rule. The EPA requested comment on its monetary benefits analysis and a monetary benefits analysis conducted by SRP. Some commenters stated that EPA and SRP had underestimated the monetary benefits while others indicated that EPA's benefits were overstated. Because the benefits analysis forms no part of legal basis for today's action, EPA is not responding to those comments.

IV. EDF v. Reilly

Today's action regarding NGS completes EPA's obligations under the settlement agreement in *EDF v. Reilly*, No. C82-6850 (N.D. Cal.), and under the first round of SIP/FIP planning called for in the visibility regulations.

V. Nonprecedential Effect of This Action

Today's promulgation is limited to the rulemaking requiring an SO_2 emission limitation for NGS in order to remedy a single-source visibility impairment in the GCNP that is traceable to NGS and, hence, remediable under EPA's 1980 visibility regulations. As such, it has no direct precedential effect on any other rulemaking action EPA might undertake in the future regarding other existing sources or Class I areas. This is so because the outcome of this rulemaking has been highly dependent upon facts and circumstances that are unique to this proceeding and thus does not apply to other cases. For example, the tracer studies and other analyses contained in the WHITEX and NGSVS reports that are key to a showing that impairment at GCNP is traceable to NGS are not being approved for use in any other rulemaking addressing other potential sources of visibility impairment. Should EPA or State agencies conduct visibility rulemakings regarding other Class I areas and other existing sources of pollution in the future, they will need to rely on attribution techniques appropriate for those other areas and sources in order to make reasoned regulatory decisions. They will not be able to rely solely on WHITEX or NGSVS findings that specifically address the GCNP and NGS to determine the existence of impairment that is reasonably attributable to any such other source. Likewise, neither the methodology used for establishing the expected improvement in visibility that could be anticipated to result from use of alternative SO_2 control systems nor the final emission limit being promulgated today will have direct precedential effect elsewhere. The statutory requirement that EPA weigh various factors before reaching a decision is by nature a case-specific process.

A. Classification

Executive Order No. 12291 requires each Federal agency to determine if a regulation is a "major" rule as defined by the order and "to the extent permitted by law," to prepare and consider an RIA in connection with every major rule. Major rules are defined as those likely to result in:

1. An annual effect on the economy of $100 million or more.

2. A major increase in costs or prices for consumers or individual industries; Federal, State, or local government agencies; or geographic region.

3. Significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of the United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The EPA judged the February 1991 proposed regulation for NGS to be a major rule based on projected annualized costs potentially in excess of $100 million. The EPA then prepared a preliminary RIA that included estimates of costs, benefits, and net benefits for three control options. The preliminary analysis, titled "Regulatory Impact Analysis of a Revision of the Federal Implementation Plan for the State of Arizona to Include SO_2 Controls for the Navajo Generating Station," and an addendum, titled "Addendum to the Regulatory Impact Analysis of a Revision of the Federal Implementation Plan for the State of Arizona to Include SO_2 Controls for the Navajo Generating Station" are available in Docket A-89-02A.

In light of the reduced estimated cost of this rule, the Office of Management and Budget (OMB) has exempted this action from the RIA requirements. Therefore, EPA did not finalize the preliminary RIA.

B. Paperwork Reduction Act

This rule will impose a modest reporting burden on the participants of the NGS to enable EPA to ensure compliance with the emission limits. Because the reporting burden affects only a single source, it is not subject to OMB review under the Paperwork Reduction Act.

C. Section 317(c) Economic Impact Assessment

This action is taken pursuant to sections 169A and 110(c) of the Act, and a section 317(c) economic impact assessment may not be required. However, all of the analytical requirements of section

317(c) have been met. The section 317(c)(1) analysis of alternative regulations, and the impact of varying the effective date, are essential considerations in promulgating this revision to the FIP for Arizona. Each of the section 317(c) requirements are included in the BART analysis prepared by EPA. Portions of the economic impact assessment are revised in this notice based on additional information and comments provided to EPA.

D. Regulatory Flexibility Act

Under the RFA, 5 U.S.C. 601-612, EPA must prepare for rules subject to notice and comment rulemaking initial and final regulatory flexibility analyses describing the impact on small entities which includes small businesses, small not-for-profit enterprises, and governmental entities with jurisdiction over populations of less than 50,000. The requirement of preparing such is inapplicable, however, if the Administrator certifies that the rule will not have a significant economic impact on a substantial number of small entities (see 5 U.S.C. 605(b)).

In the February 1991 proposal, the Administrator certified that the proposed rule would not have a significant impact on a substantial number of small entities because none of the participants of NGS are classified as small according to the guidelines developed by the Small Business Administration. Moreover, EPA estimated that for all of the electric utilities using NGS power, the impact on electric utility rates would be substantially less than 5 percent.

Similarly, the emission limitation being established today does not have a direct impact on and will not apply to a substantial number of small entities because none of the participants of NGS subject to today's action are classified as small according to the guidelines developed by the Small Business Administration. Further, during the comment period on the February 1991 proposal and the August 1991 supplemental notice, SRP, NPC, and CAWCD submitted comments indicating that the potential indirect costs that may be passed on to customers of the NGS participants were less than those estimated by EPA.

The comments on potential indirect costs incurred by rate payers submitted by SRP, NPC, CAWCD, and others do not address the costs incurred directly by the NGS participants, the entities that are subject to and directly impacted by today's action and that do not qualify as "small." Further, except for the general comments submitted by the Bureau of Reclamation, the comments do not address EPA's conclusion under the RFA that the proposed rule would not have a significant economic impact on a substantial number of small entities. Before discussing the comments, EPA notes that it cannot and is not legally required to foresee all of the indirect impacts associated with today's action. The EPA cannot anticipate how the NGS participants will seek to pay for the costs associated with today's action, the decisions that public utility commissions will confront and make, etc. Nevertheless, EPA has considered and attempted to respond to those comments addressing indirect costs impacting potential small entities in order to explain more fully for the public the Administrator's finding under the RFA that today's final rule will not have a significant impact on a substantial number of small entities.

In the draft RIA, EPA estimated a $92 million per year control cost would increase SRP's and NPC's electric rates by a maximum of 3.1 percent and 4.4 percent, respectively.[30] The EPA estimated that of the six utilities receiving power from NGS, these two would experience the greatest electric rate increases if power generation costs were passed through completely to consumers because both SRP and NPC rely on 25 percent of NGS electricity for their total sales and each has a low average cost/kWh relative to the other four participants. Further, EPA estimated that these percentage estimates likely were overestimates due to various dampening effects omitted from the calculation.

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[30] See generally "Draft Regulatory Impact Analysis of a Revision of the Federal Implementation Plan for the State of Arizona to Include SO_2 Controls for the Navajo Generating Station."

The NPC submitted comments on EPA's February 1991 proposal in which it estimated that the control costs would result in a 2.27 percent increase for its residential customers. The SRP also submitted comments on the February 1991 proposal in which it estimated that a control strategy costing $90 million would result in a 2.1 percent to 2.5 percent increase to its rate payers. These estimated increases are less than the 5 percent impact estimated in EPA's February 1991 proposal. Further, these costs may be overestimated in that, for example, today's control option is cheaper than that advanced in the February 1991 proposal. In addition, the sale of SO_2 allowances under the SO_2 allowance trading program established by EPA under title IV of the Act may mitigate costs.

In the draft RIA for the February 1991 proposal, EPA also estimated the economic impact on CAP water users. The EPA estimated an 18 percent increase in water costs for farmers receiving agricultural water from the CAP. This estimate translated into a $11/acre-foot increase (3 cents per 1000 gallons of water) raising the total annual variable costs for a 800-900 acre farm (the size of the average farm served by CAP) by 3-4 percent per year ($22,000/year). The EPA further explained why these costs were anticipated to be overestimates and how the costs compared with unsubsidized non-CAP water.

At the public hearing on the February 1991 proposal, a memberof the Board of Directors of the CAWCD testified that their analysis concluded the NGS control costs would result in a $4.50 per acre-foot increase in CAP water, less than EPA's $11 estimate. The CAWCD further testified that the $4.50/acre-foot would translate into an annual cost increase of $7,200 for the average farmer irrigating 800 acres. In comments dated September 6, 1991 addressing the proposal identified in EPA's August 1991 supplemental notice, CAWCD generally commented that the control costs will add 7 to 10 percent to the annual costs of its water delivery and, in turn, additional costs of nearly $10,000 per year for CAP water for a typical farmer, costs of approximately $3 million

annually on all of its municipal water suppliers taken together, and a $1.5 million annual increase on Indian tribes.

As evident, the CAWCD cost figures are inconsistent in that testimony at the public hearing and the written text accompanying that testimony estimated an annual impact of $7,200 on the average farmer, plus comments dated September 6, 1991 estimated that costs would be "nearly $10,000 per year." The inconsistency is further perplexing in that the option advanced in the August 1991 notice was less expensive than that identified in the February 1991 proposal. Because CAWCD's comments on costs are general and undocumented, EPA cannot check their derivation. In any case, both cost figures are less than half of that identified in EPA's draft RIA. The EPA estimates that the $7,200 and $10,000 cost figures submitted by CAWCD would translate into a 1 percent to 2 percent increase in total variable costs for the average farmer. The EPA has no reason to believe that the percentage increase in costs of water for municipal suppliers or Indian tribes will be substantially different from the economic impact on farmers purchasing CAP water. Further, as noted above, the owner of NGS may substantially mitigate the costs of today's action by selling SO_2 allowances. This, in turn, should curb any indirect costs incurred.

Finally, in commenting on EPA's February 1991 proposal, the Bureau of Reclamation (the Bureau) generally commented on EPA's conclusion that an initial RFA was unnecessary by noting that testimony at the public hearing provided evidence of adverse impacts on small businesses, farmers, governmental entities, and Indian tribes. In its only example of cost impacts, the Bureau commented that the agricultural customers of the CAWCD could experience increases in their water rates of approximately $10 per acre-foot which, they commented, would result in a 16 percent increase in annual costs for CAWCD's large customers.

The Bureau's comments that agricultural customers of CAWCD could experience increases in water rates of approximately $10 per acre-foot are inconsistent with CAWCD's own comments which suggested an impact of approximately $44.50 per acre-foot and,

further, were not substantiated. In addition, the Bureau's $10 per acre-foot estimate is lower than EPA's more conservative estimate. The Bureau's comments also were based on the February 1991 option which, as noted, is more costly than today's final action. Based on the CAWCD comments, EPA estimates that today's action will result in less than a 2 percent increase in the total variable costs for the average CAWCD farmer.

As noted, EPA has estimated the cost impacts on the residential customers of SRP and NPC. Residential customers are usually the category of consumers bearing the greatest impact in cost increases because most utility rate structures typically charge incrementally less for the more power that is consumed. Further, as noted, EPA expects the impacts on the residential customers of NPC to be higher than any other customers of the NGS participants. Thus, EPA's estimate of the impact on NPC residential customers serves as a worst-case check on the potential electricity rate impacts on other potential customers. The impact on all potential small entities, including school districts, local governments, business establishments, not-for-profit enterprises, etc., should be similar or smaller. Thus, not only were the Bureau's general claims about potential impacts on small entities undocumented, but EPA believes its consideration of the impacts on residential rate payers affords a reasonable check of the potential impacts on other NGS electricity customers.

Accordingly, for all of the reasons stated, I hereby certify that the regulation being promulgated today will not have a significant economic impact on a substantial number of small entities.

E. Interagency Review

This final rule was submitted to OMB for review. Drafts submitted to OMB for review, written comments on these drafts by OMB or other agencies, and FPA's written responses to such comments have been placed in the rulemaking docket.

List of Subjects in 40 CFR Part 52

Air pollution control, Nitrogen dioxide, Particulate matter, Carbon monoxide, Ozone, Lead, Sulfur oxides, Reporting and recordkeeping requirements.

Dated: September 18, 1991.

William K. Reilly,

Administrator.

PART 52—[AMENDED]

1. The authority for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401-7642.

2. Section 52.145 is amended by adding paragraph (d) to read as follows:

§ 52.145 Visibility protection.

* * * * *

(d) This paragraph is applicable to the fossil fuel-fired, steam-generating equipment designated as Units 1, 2, and 3 at the Navajo Generating Station in the Northern Arizona Intrastate Air Quality Control Region (§ 81.270 of this chapter).

(1) Definitions.

Affected Unit(s) means the steam-generating unit(s) at the Navajo Generating Station, all of which are subject to the emission limitation in paragraph (d)(2) of this section, that has accumulated at least 365 boiler operating days since the passage of the date defined in paragraph (d)(6) of this section applicable to it.

Administrator means the Administrator of EPA or his/her designee.

Boiler Operating Day for each of the boiler units at the Navajo Generating Station is defined as a 24-hour calendar day (the period of time between 12:01 a.m. and 12:00 midnight in Page, Arizona) during which coal is combusted in that unit for the entire 24 hours.

Owner or Operator means the owner, participant in, or operator of the Navajo Generating Station to which this paragraph is applicable.

Unit-Week of Maintenance means a period of 7 days during which a fossil fuel-fired steam-generating unit is under repair, and no coal is combusted in the unit.

(2) *Emission limitation.* No owner or operator shall discharge or cause the discharge of sulfur oxides into the atmosphere in excess of 42 ng/J [0.10 pound per million British thermal units (lb/MMBtu)] heat input.

(3) *Compliance determination.* Until at least one unit qualifies as an affected unit, no compliance determination is appropriate. As each unit qualifies for treatment as an affected unit, it shall be included in the compliance determination. Compliance with this emission limit shall be determined daily on a plant-wide rolling annual basis as follows:

(i) For each boiler operating day at each steam generating unit subject to the emission limitation in paragraph (d)(2) of this section, the owner or operator shall record the unit's hourly SO_2 emissions using the data from the continuous emission monitoring systems, [required in paragraph (d)(4) of this section) and the daily electric energy generated by the unit (in megawatt-hours) as measured by the megawatt-hour meter for the unit.

(ii) Compute the average daily SO_2 emission rate in ng/J (lb/MMBtu) following the procedures set out in method 19, appendix A, 40 CFR part 60 in effect on October 3, 1991.

(iii) For each boiler operating day for each affected unit, calculate the product of the daily SO_2 emission rate (computed according to paragraph (d)(3)(ii) of this section) and the daily electric energy generated (recorded according to paragraph (d)(3)(i) of this section) for each unit.

(iv) For each affected unit, identify the previous 365 boiler operating days to be used in the compliance determination. Except as provided in paragraphs (d)(9) and (d)(10) of this section, all of the immediately preceding 365 boiler operating days will be used for compliance determinations.

(v) Sum, for all affected units, the products of the daily SO_2 emission rate-electric energy generated (as calculated according to paragraph (d)(3)(ii) of this section) for the boiler operating days identified in paragraph (d)(3)(iii) of this section.

(vi) Sum, for all affected units, the daily electric energy generated (recorded according to paragraph (d)(3)(i) of this section) for the boiler operating days identified in paragraph (d)(3)(iii) of this section.

(vii) Calculate the weighted plant-wide annual average SO_2 emission rate by dividing the sum of the products determined according to iv above by the sum of the electric energy generated determined according to paragraph (d)(3)(v) of this section.

(viii) The weighted plant-wide annual average SO_2 emission rate shall be used to determine compliance with the emission limitation in paragraph (d)(2) of this section.

(4) *Continuous emission monitoring.* The owner or operator shall install, maintain, and operate continuous emission monitoring systems to determine compliance with the emission limitation in paragraph (d)(2) of this section as calculated in paragraph (d)(3) of this section. This equipment shall meet the specifications in appendix B of 40 CFR part 60 in effect on October 3, 1991. The owner or operator shall comply with the quality assurance procedures for continuous emission monitoring systems found in appendix F of 40 CFR part 6 in effect on October 3, 1991.

(5) *Reporting requirements.* For each steam generating unit subject to the emission limitation in paragraph (d)(2) of this section, the owner or operator:

(i) Shall furnish the Administrator written notification of the SO_2 oxygen, and carbon dioxide emissions according to the procedures found in 40 CFR § 60.7 in effect on October 3, 1991.

(ii) Shall furnish the Administrator written notification of the daily electric energy generated in megawatt-hours.

(iii) Shall maintain records according to the procedures in 40 CFR 60.7 in effect on October 3, 1991.

(iv) Shall notify the Administrator by telephone or in writing within one business day of any outage of the control system needed for compliance with the emission limitation in paragraph (d)(2) of this section and shall submit a follow-up written report within 30 days of the repairs stating how the repairs were accomplished and justifying the amount of time taken for the repairs.

(6) *Compliance dates*. The requirements of this paragraph shall be applicable to one unit at the Navajo Generating Station beginning November 19, 1997, to two units beginning November 19, 1998, and to all units beginning on August 19, 1999.

(7) *Schedule of compliance*. The owner or operator shall take the following actions by the dates specified:

(i) By June 1, 1992, award binding contracts to an architectural and engineering firm to design and procure the control system needed for compliance with the emission limitation in paragraph (d)(2) of this section.

(ii) By January 1, 1995, initiate on-site construction or installation of a control system for the first unit.

(iii) By May 1, 1997, initiate start-up testing of the control system for the first unit.

(iv) By May 1, 1998, initiate start-up testing of the control system for the second unit.

(v) By February 1, 1999, initiate start-up testing of the control system for the third unit.

The interim deadlines will be extended if the owner or operators can demonstrate to the Administrator that compliance with the deadlines in paragraph (d)(6) of this section will not be affected.

(8) *Reporting on compliance schedule*. Within 30 days after the specified date for each deadline in the schedule of compliance (paragraph (d)(7) of this section, the owner or operator shall notify the Administrator in writing whether the deadline was met. If it was not met the notice shall include an explanation why it was not met and the steps which shall be taken to ensure future deadlines will be met.

(9) *Exclusion for equipment failure during initial operation.* For each unit, in determining compliance for the first year that such unit is required to meet the emission limitation in paragraph (d)(2) of this section, periods during which one of the following conditions are met shall be excluded:

(i) Equipment or systems do not meet designer's or manufacturer's performance expectations.

(ii) Field installation including engineering or construction precludes equipment or systems from performing as designed.

The periods to be excluded shall be determined by the Administrator based on the periodic reports of compliance with the emission limitation in paragraph (d)(2) of this section which shall identify the times proposed for exclusion and provide the reasons for the exclusion, including the reasons for the control system outage. The report also shall describe the actions taken to avoid the outage, to minimize its duration, and to reduce SO_2 emissions at the plant to the extent practicable while the control system was not fully operational. Whenever the time to be excluded exceeds a cumulative total of 30 days for any control system for any affected unit, the owner or operators shall submit a report within 15 days addressing the history of and prognosis for the performance of the control system.

(10) *Exclusion for catastrophic failure.* In addition to the exclusion of periods allowed in paragraph (d)(9) of this section, any periods of emissions from an affected unit for which the Administrator finds that the control equipment or system for such unit is out of service because of catastrophic failure of the control system which occurred for reasons beyond the control of the owner or operators and could not have been prevented by good engineering practices will be excluded from the compliance determination. Events which are the consequence of lack of appropriate maintenance or of intentional or negligent conduct or omissions of the owner or operators or the control system design, construction, or operating contractors do not constitute catastrophic failure.

(11) *Equipment operation.* The owner or operator shall optimally operate all equipment or systems needed to comply with the requirements of this paragraph consistent with good engineering practices to keep emissions at or below the emission limitation in paragraph (d)(2) of this section, and following outages of any control equipment or systems the control equipment or system will be returned to full operation as expeditiously as practicable.

(12) *Maintenance scheduling.* On March 16 of each year starting in 1993, the owner or operator shall prepare and submit to the Administrator a long-term maintenance plan for the Navajo Generating Station which accommodates the maintenance requirements for the other generating facilities on the Navajo Generating Station grid covering the period from Mach 16 to March 15 of the next year and showing at least 6 unit-weeks of maintenance for the Navajo Generating station during the November 1 to March 15 period, except as provided in paragraph (d)(13) of this section. This plan shall be developed consistent with the criteria established by the Western States Coordinating Council of the North American Electric Reliability Council to ensure an adequate reserve margin of electric generating capacity. At the time that a plan is transmitted to the Administrator, the owner or operator shall notify the Administrator in writing if less than the full scheduled unit-weeks of maintenance were conducted for the period covered by the previous plan and shall furnish a written report stating how that year qualified for one of the exceptions identified in paragraph (d)(13) of this section.

(13) *Exceptions for maintenance scheduling.* The owner or operator shall conduct a full 6 unit-weeks of maintenance in accordance with the plan required in paragraph (d)(12) of this section unless the owner or operator can demonstrate to the satisfaction of the Administrator that a full 6 unit-weeks of maintenance during the November 1 to March 15 period should not be required because of the following:

(i) There is no need for 6 unit-weeks of scheduled periodic maintenance in the year covered by the plan;

(ii) The reserve margin on any electrical system served by the Navajo Generating Station would fall to an inadequate level, as defined by the criteria referred to in paragraph (d)(12) of this section.

(iii) The cost of compliance with this requirement would be excessive. The cost of compliance would be excessive when the economic savings to the owner or operator of moving maintenance out of the November 1 to March 15 period exceeds $50,000 per unit-day of maintenance moved.

(iv) A major forced outage at a unit occurs outside of the November 1 to March 15 period, and necessary periodic maintenance occurs during the period of forced outage.

If the Administrator determines that a full 6 unit-weeks of maintenance during the November 1 to March 15 period should not be required, the owner or operator shall nevertheless conduct that amount of scheduled maintenance that is not precluded by the Administrator. Generally, the owner or operator shall make best efforts to conduct as much scheduled maintenance as practicable during the November 1 to March 15 period.

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[AD-FRL-3432-3]

Assessment of Visibility Impairments and Integral Vista Identification

AGENCY: U.S. Environmental Protection Agency [EPA].

ACTION: Proposed rule.

SUMMARY: This proposal addresses the necessity of revising the State implementation plans (SIP's) for the States of Arizona, Maine, Minnesota, and Utah to include emission limitations representing best available retrofit technology (BART) or other control strategies to remedy source-attributable impairments that may exist within the States' Class I areas.

* * *

C. Today's Action

In today's proposal, EPA addresses certified visibility impairments in four Class I areas. Based on the monitoring activities conducted in these areas, EPA has not found that the visibility impairment is reasonably attributable to any specific source. Thus, with respect to Voyageurs National Park, EPA considers it unnecessary at this time to revise the FIP for Minnesota to include BART requirements or other control strategies. In addition, with respect to Petrified Forest National Park and Saguaro Wilderness, EPA considers it is unnecessary at this time to revise the FIP for Arizona to include BART requirements or other control strategies. Similarly, with respect to the RCIP and associated integral vistas, EPA considers it unnecessary at this time to revise the FIP for Maine to include BART requirements or other control strategies. However, any future certification of impairment in these areas will be addressed in the periodic review of each State's long-term strategy (40 CFR 51.306 and 52.29).

Discussion of Impairment

A. Voyageurs National Park, Minnesota

The Department of the Interior (DOI) previously noted that uniform haze as well as elevated and ground-based layered haze resulted in visibility impairments in Voyageurs National Park (52 FR 7802 (March 12, 1987)). In order to identify the source of the impairment, the Steering Committee of the Interagency Monitoring of Protected Visual Environments (IMPROVE) directed its contractor, Air Resources Specialists Inc. (ARS), to conduct photographic monitoring of the Class I area to assess visual air quality impact by plumes from local sources. IMPROVE is an ongoing interagency monitoring effort formed to address the specific data needs of the section 169A visibility protection program. IMPROVE has the responsibility to collect visibility date in order to establish background levels necessary to assess impacts of potential new sources, determine sources and levels of reasonably attributable impairment, assess progress toward the national visibility goal, and promote the development of improved visibility monitoring techniques. To accomplish these objectives, a steering committee was formed with representatives from EPA, FWS, NPS, U.S. Forest Service, and Bureau of Land Management.

The ARS personnel conferred with NPS in selecting an appropriate monitoring site in Voyageurs National Park. On October 24, 1986, NPS installed an 8mm time-lapse photographic system in the park to view north across Kabetogama Lake. Several sources are located approximately 30 km west-northwest of the vista. The NPS personnel also installed a 35mm camera to view east through the park, capturing an appropriate target for visual air quality analysis.

The ARS coordinated the photographic monitoring of the area from October 24, 1986 through April 1988. On May 5, 1988, ARS submitted the monitoring results in a report to the EPA chairman of

the IMPROVE steering committee.[4] As noted in the May 5 report, the data gathered by ARS displayed no distinct, identifiable plumes entering the Class I area. Thus, ARS concluded that no visibility impairments in Voyageurs National Park could be presently traced to specific sources. The NPS reviewed the 35mm slides and 8mm time-lapse movies and, by letter dated July 25, 1988, concurred with ARS.

In addition, the Minnesota Pollution Control Agency (MPCA) conducted a modeling screening analysis for the Boise Cascade paper mill located approximately 18 km from the park boundary.[5] The MPCA used the Level I visibility screening procedures according to the methods recommended by EPA in the "Workbook for Estimating Visibility Impairment," EPA-450/4-80-031. Based on its modeling screening analysis, the MPCA concluded that Boise Cascade's emissions do not impair visibility beyond a distance of 3 km from the source. The EPA's staff reviewed the screening analysis and concluded that there is no potential for visibility impairment in Voyageurs National Park as a result of the actual or potential allowable emissions from the Boise Cascade paper mill.[6] Accordingly, EPA considers it unnecessary at this time to revise the FIP for Minnesota to include BART requirements and other control measures.

B. Petrified Forest National Park, Arizona

The NPS earlier noted the occurrence of a yellowish-brown layered haze in the Petrified Forest National Park which may be attributable to area powerplants (52 FR 7802). Accordingly, the

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[4]See report from ARS to EPA (May 5, 1988) (discussing monitoring for reasonably attributable impact of local sources at Voyageurs National Park, Petrified Forest National Park, and Moosehorn Wilderness area).

[5] See letter from Minnesota Pollution Control Agency to Janet Meiss of EPA (April 21, 1987) (discussing visibility impairment at Voyageurs).

[6] See memorandum from Jawad Tooma of EPA to Pam Buschman of EPA (June 30, 1988) (discussing Minnesota screening analysis).

IMPROVE committee directed ARS to conduct photographic monitoring of the Class I area to assess impacts on visual air quality by plumes from local sources. On March 13, 1987, NPS personnel installed an 8mm time-lapse and 35mm color-slide camera system at the Petrified Forest to view the length of the park looking southeast toward Blue Mesa. Between March 13, 1987 and July 31, 1987, the system recordings disclosed no visible plumes. On July 31, 1987, ARS relocated the system to record a southwest view looking toward the Cholla Generating Station. This coal-fired power plant is located approximately 40 km outside park boundaries. The system operated until March 1, 1988. During this monitoring period, the system again recorded no visible plumes in the Class I area. While the record reveals occasional horizon discoloration, ARS has concluded that such discoloration is not readily identifiable or traceable to a specific source. As noted in the May 5, 1988 report submitted to the EPA by ARS, the photographic monitoring at the Petrified Forest did not display identifiable plumes in the Class I area. The NPS reviewed the 35mm slides and 8mm time-lapse movies, and by letter dated July 25, 1988, concurred with ARS that impairments in the park could not be traced to a specific source. Accordingly, with respect to the Petrified Forest National Park, EPA considers it unnecessary at this time to revise the FIP for Arizona to include BART requirements or other control measures.

C. Saguaro Wilderness, Arizona

An earlier NPS survey noted the existence during stagnant winter meteorological conditions of a uniform haze within the Class I area and related vistas (52 FR 7802). The EPA Regional Office staff reviewed the emissions inventory near Saguaro Wilderness which indicates that there are a number of power plants and smelter operations within 100 km of Saguaro. Moreover, there are several urban areas in the vicinity of Saguaro, including the city of Tucson which is situated between the east and west sections of the Class I area. At present, it appears that impairments in the Saguaro Wilderness area result from the combined emissions of several

major, minor, and urban sources, and are not attributable to any specific source. Thus, EPA considers it unnecessary at this time to revise the FIP for Arizona to include BART requirements or other control measures.

The EPA notes, however, that NPS is deploying in the Saguaro Wilderness a camera system which will operate for approximately 1 year. If, upon review of the data to be gathered from the ongoing study, the EPA and NPS attributes visibility impairment to a specific source, then such impairments will be addressed in the 3-year periodic review of Arizona's long-term visibility strategy.

D. Canyonlands National Park, Utah, and Grand Canyon National Park, Arizona

The DOI previously noted the occurrence of visibility impairment episodes at Canyonlands and Grand Canyon National Parks during winter inversion conditions (52 FR 7802). However, due to the proximity of several major point sources and small urban sources near the Class I areas, EPA was unable to attribute the impairment to specific sources. At that time, the NPS was in the process of conducting a preliminary research effort in the Canyonlands National Park/Lake Powell Basin/Grand Canyon National Park areas. The NPS, the Salt River Project, the Electric Power Research Institute, and others conducted the Winter Haze Intensive Tracer Experiment (WHITEX) study over a 6-week period during the 1986-87 winter season to quantify the air pollution impact of the Navajo Power Plant on specific receptors, including Canyonlands and Grand Canyon National Parks. A tracer (a gas not normally found in the ambient air) was added to the emissions from the stack of the Navajo Power Plant located near Page, Arizona. Monitoring stations were located throughout the region, including Canyonlands and Grand Canyon National Parks to measure concentrations of this tracer. However, the data analyses have been delayed and the evaluation of the WHITEX study is incomplete. Therefore, to allow completion of the data analysis, the parties in *EDF v. Thomas* have agreed to again defer EPA's decision on the

need to include BART requirements or other control strategies in the FIP for Utah and Arizona to address existing impairment in Canyonlands and Grand Canyon National Parks. Accordingly, EPA intends to propose a decision and any appropriate rulemaking no later than August 31, 1989.

E. Moosehorn Wilderness Area, Maine

The FWS previously noted the existence of elevated layered hazes of differing colors in the Moosehorn Wilderness area (52 FR 7802). However, the existing data was inadequate to positively identify the sources of the impairment or to complete a BART analysis. Consequently, the FWS and IMPROVE directed ARS to install an 8mm time-lapse camera system at Moosehorn. The ARS installed the camera on October 5, 1987.

As noted above, the FWS has identified the GP pulp and paper mill as the probable source of impairment existing within the Moosehorn Wilderness. The mill is approximately 7 km from the northern section of Moosehorn Wilderness. The camera system installed at Moosehorn has recorded a visible plume emitted nearly every day from the mill. Under certain conditions, the plume appears to cross the wilderness boundary causing impairments in the wilderness area.

However, as discussed above, the newly revised settlement agreement provides for further deferral of EPA's decision concerning BART analysis for the GP mill, pending completion of the PSD permit process currently underway by the State of Maine. The PSD permit process includes review of existing sources of plume blight at the mill. The existing impairment may be reduced, and a BART analysis rendered unnecessary if, as EPA anticipates, additional air pollution controls on existing facilities are required by the PSD permit and other existing facilities which are contributing to impairment are retired from service. Following issuance of the PSD permit, monitoring activities will continue at Moosehorn. The EPA will decide no later than August 31, 1989 the necessity for BART or other control measures to remedy impairments in Moosehorn.

F. Roosevelt Campobello International Park, New Brunswick, Canada

The RCIP Commission previously noted impairments existing within integral vistas associated with the park. Because of the proximity of the GP paper mill to RCIP, EPA believed that impairments in the RCIP may have been attributable to the mill. The mill is approximately 45 km northwest of RCIP and is generally 40 km northwest of the integral vistas.

The RCIP Commission requested the NPS to study potential impacts of GP's proposal to install a new boiler at the Woodland Mill. In a September 28, 1987 letter to the RCIP Commission, the NPS stated that

> . . . based on the emission limitations proposed for the future mill configuration, there is little potential for the visibility in RCIP or the integral vistas associated with the park to be affected adversely. Various visibility parameters were assessed and compared to thresholds of human perceptibility. Based on the outputs from the visibility model, NPS determined that the magnitude of a plume from the proposed project, were it to cross into the park or its integral vistas, would be smaller than the presently accepted levels at which a human could perceive a plume. Given these results, NPS is of the opinion that the potential for visibility impacts in RCIP or the associated integral vista is low.[7]

Accordingly, the EPA considers it unnecessary at this time to revise the FIP for Maine to include BART requirements or other control measures to remedy impairments at RCIP. If additional impairment is identified, it will be addressed in the 3-year periodic review of Maine's long-term strategy.

* * *

[7] See letter from NPS to RCIP Commission (September 28, 1987).

7802 **Federal Register**/Vol. 52, No. 48/Thursday, March 12, 1987/Proposed Rules

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81

[AD-FRL-3157-3]

State Implementation Plans for Visibility Long-Term Strategies, Integral Vistas, and Implementation

Control Strategies

AGENCY: U.S. Environmental Protection Agency [EPA].

ACTION: Proposed rulemaking.

SUMMARY: In this action, EPA proposes to disapprove the State implementation plans (SIP's) of 32 States for failing to comply with the provisions in EPA's existing regulations for visibility protection in mandatory Class I Federal areas dealing with impairment which can be reasonably attributed to a source. The EPA proposes Federal plans to be incorporated into the SIP's of these States to meet the general visibility plan requirements and long-term strategies of 40 CFR 51-.302 and 51.306.

SUPPLEMENTARY INFORMATION:

Background

A. Regulatory Requirements and Litigation Challenges

Section 169A of the Act, 42 U.S.C. 7491, sets as a national goal "the prevention of any future and remedying of any existing impairment of visibility in any mandatory Class I Federal area which impairment results from manmade air pollution." Mandatory Class I Federal areas are certain national parks, wildernesses, and international parks as described in section 162(a) of the Act, 42 U.S.C. 7472(a). Section 169A requires visibility protection for mandatory Class I Federal areas where EPA has determined that visibility is an important value. On November 30, 1979, EPA identified 156 of these areas where visibility is an important air quality related value (see 44 FR 69122). Section 169A specifically requires EPA to promulgate regulations requiring certain States to

amend their SIP's to provide for visibility protection for these 156 areas.

On December 2, 1980, EPA promulgated the required visibility regulations at 45 FR 80084, codified at 40 CFR 51.300 *et seq*. The visibility regulations require 36 States listed in section 51.300(b) to (1) develop a program to assess and remedy visibility impairment from new and existing sources, (2) develop a long-term (10 to 15 years) strategy to assure progress toward the national goal, (3) develop a visibility monitoring strategy to collect information on visibility conditions, and (4) consider any "integral vistas" (important views of landmarks or panoramas that extend outside of the boundaries of the Class I area and considered by the FLM's to be critical to the visitor's enjoyment of the Class I areas) in all aspects of visibility protection. The regulations required the States to submit revised SIP's satisfying those provisions to EPA by September 2, 1981 [see 45 FR 80091, codified at 40 CFR 51.302(a)(1)].

These regulations only address a type of visibility impairment which can be traced to a single source or small group of sources known as reasonably attributable impairment or "plume blight." The EPA deferred action on the regulation or widespread homogeneous haze (referred to as regional haze) and urban plumes due to scientific and technical limitations in visibility monitoring techniques and modeling methods (see 45 FR 80085 col.3).

2. Assessment of Visibility Impairment.

The EPA reviewed the information provided by the DOI to determine if the impairment (1) appeared to occur in the Class I area, and (2) if the impairment was a type which may be traceable to specific sources. The EPA did not conduct a detailed review of the information provided by the FS because of its withdrawal of the certification. For five Class I areas - Bryce Canyon, Carlsbad Caverns, Isle Royale, Pinnacles, and Mesa Verde National Parks - the documentation is not sufficient to determine if the impairment is within the park boundaries. The EPA is aware that some of the States containing these Class I areas may wish to identify and

protect integral vistas under their own authority and may wish to develop their own assessment of this information. They are, however, not required to do so, and thus EPA did not address the impairment in the potential integral vistas of these five areas in today's notice.

The EPA reviewed the slides provided by the NPS to illustrate uniform haze in NPS managed lands. For the most part, EPA could not determine that the impairment was reasonably attributable. Accordingly, since the regulations are not designed to address uniform or regional haze, the EPA is proposing that BART requirements or other control measures are unnecessary at this time in the FIP's for 28 States.

The EPA is aware that the FLM's may in the future provide additional information on this impairment which would allow EPA or a State to attribute it to a specific source. In such cases, the information would be reviewed under the procedures described above and addressed in the periodic review of the long-term strategy discussed below.

The information provided by DOI and RCIP Commission indicated that the following 10 Class I areas in 7 States are experiencing visibility impairment within the park boundaries which may be traceable to specific sources:

Tuxedni Wilderness - Alaska

Brigantine Wilderness - New Jersey

Cape Romain Wilderness - South Carolina

Moosehorn Wilderness - Maine

Roosevelt Campbello International Park - Maine

Voyageurs National Park - Minnesota

Grand Canyon National Park - Arizona

Canyonlands National Park - Utah

Petrified Forest National Park - Arizona

Saguaro Wilderness - Arizona

The EPA's Regional Offices surveyed the emission inventories near these areas. Copies of these surveys which discuss the location

of existing sources near the Class I areas, the meteorology and other factors, have been placed in Docket A-85-26. The information for each of the Class I areas and EPA's proposed actions concerning the impairments are discussed below.

3. Discussion of Impairments

a. Tuxedni Wilderness, AK. The FWS survey noted the existence of a brownish-yellow layered haze. The field staff noted that the haze occurs in the wilderness area when the winds are from the northeast and believes that the source(s) are four refineries located north of the wilderness.

The State of Alaska has a fully approved visibility DIP. At the time the SIP was developed, and approved, the FLM had not certified the existence of visibility impairment and thus the SIP does not contain any BART provisions. However, the regulations require the State to address any future certifications of impairment in the periodic review of the long-term strategy (see discussion below). The EPA has sent a copy of the information provided by the DOI to the State of Alaska and required that it be addressed in its first periodic review. Therefore, EPA did not conduct a detailed review of the emissions inventory near this Class I area.

b. Brigantine Wilderness Area, NJ. The FWS survey noted that visibility impairment has occurred on occasion. A yellowish plume has been seen when looking in the direction of a particular power plant at midday with southwesterly winds. However, this plume is not necessarily entering the refuge, and no record has been kept to document impairment episodes.

In addition, EPA received copies of the results of an air quality assessment of the impact of a proposed modification to the B.L. England Generating Station from the FLM and commenters on the SIP deficiency notice. The assessment indicates that the plume from the proposed modification may be detectable from Brigantine, but the impact on the entire field of view would be small and would occur infrequently. The assessment concluded that the modification would result in no significant differences from existing conditions. Commenters also noticed that an FWS report to the State of New

Jersey indicated that the impairment was typically seen in a vista associated with the Class I area rather than within the Class I area.

The EPA reviewed the emission inventory near Brigantine Wilderness. There are 85 sources of particulate matter (PM), 40 sources of sulfur dioxide (SO_2), and 27 sources of oxides of nitrogen (NO_x) in the vicinity of Brigantine Wilderness. In addition, there are several urban areas near the area. These include Atlantic City [20 kilometers (km) to the south], Winslow (40 km to the west-northwest), Burlington (70 km to the northwest), Philadelphia (80 km to the west-northwest), and Camden (75 km to the west-northwest). The prevailing winds are from the west or west-northwest in the winter months and southerly during the summer.

In EPA's judgment, although the impairment in Brigantine Wilderness may indeed be within the Class I area, there is not sufficient documentation to indicate that this is the case. In any event, due to the number of urban, major, and minor sources in the vicinity of Brigantine Wilderness, it is unlikely that any single source can be shown to cause impairment in the Class I area. As mentioned above, the visibility regulations were not intended to address impairments caused by urban plumes or regional haze. Therefore, EPA considers BART provisions or any other control requirements unnecessary in the FIP for the State of New Jersey at this time. The EPA is soliciting comment on this determination.

c. Cape Romain Wilderness, SC. The FWS survey for this area has noted a "uniform haze, which when it does occur, however, is difficult to tell which source is producing the problem. . . ." The survey listed several sources which the field staff believed may be contributing to the haze. No record has been kept to document the impairment episodes.

The State of South Carolina commented on the notice of deficiency that the FLM's information was outdated. The State contended that the sources listed by the FWS's survey had recently installed controls which brought the sources into attainment. The

State contended that additional controls on these or other sources were unnecessary in the SIP for South Carolina at this time.

The EPA Regional Office staff reviewed the State's comments and emissions inventory near Cape Romain Wilderness. There are approximately 35 major sources of PM, SO_2, and NO_x within 100 km of the center of Cape Romain Wilderness. There are two urban areas within 50 km of the wilderness; Georgetown, South Carolina, which is 40 km to the north and Charleston, South Carolina, which is 40 km to the west southwest of the southern end. The most visited section of the wilderness is at the southern end of the wilderness. The prevailing winds are from the south-southwest and north northwest, depending on the season.

In EPA's judgment, this impairment is most likely caused by the combination of the major, minor, and urban sources near Cape Romain Wilderness. For this reason, it is not likely that additional monitoring programs or modeling efforts will result in an attribution to any specific source. Since the visibility regulations were not intended to address this type of impairment, EPA is proposing that BART provisions or any other control strategy are not required in the FIP for South Carolina at this time. The EPA is soliciting comments on this determination.

d. Moosehorn Wilderness and Roosevelt Campobello International Park, ME. The Moosehorn Wilderness has a northern and southern section approximately 20 km apart. The RCIP is about 15 km east of the southern section. Some of the integral vistas of RCIP face toward the Moosehorn Wilderness.

The FWS survey noted the existence of elevated layered hazes of differing colors in Moosehorn wilderness. The FWS believes a pulp and paper mill may be responsible for the white haze and an asphalt plant for the black haze. The FWS has also noted that burning at local dumps may also be a problem. The RCIP Commission has also noted that local sources may be affecting visibility in the park and associated vistas. No record has been kept to document impairment episodes.

This part of Maine is sparsely populated. Only a few sources are within 100 km of the Class I areas. There are two sources within 5 km of the northern section of Moosehorn Wilderness as mentioned by the FWS. One source does not currently meet reasonably available control technology (RACT) but is now pursuing a permit for a new boiler. This may bring the control technology to RACT. The other source has installed control technology before 1980 which is estimated to be 99.9 percent efficient for PM. According to the State this source has intermittently been in noncompliance with State visible emission regulations.

Due to the rural nature of this section of Maine and the proximity of the sources to the Class I areas, the EPA believes that these sources may, in part, be causing visibility impairment in Moosehorn Wilderness and RCIP or its vistas. Although there is reason to suspect these sources, EPA does not have adequate data to positively identify these sources or to complete a BART analysis. The EPA, in cooperation with the FLM, is planning to install photographic monitoring equipment in Moosehorn to develop a data base for regulatory decision making. The EPA is deferring a decision on the necessity for BART and other control measures in Maine's FIP at this time. The EPA intends to propose a decision no later than August 31, 1988, as allowed by the revised settlement agreement.

e. Voyageurs National Park, MN. The DOI identified elevated layered haze, ground-based layered haze, and uniform haze as types of visibility impairment in Voyageurs National Park. The NPS survey noted that the elevated layered haze occurs with westerly or northwesterly winds which is the predominant wind patters. Ground-based hazes were believed to be produced locally by wood burning stoves primarily from private "in holders" and "leaseback" cabins within the park. Uniform haze occurs periodically when the winds are westerly. No record has been kept to document the frequency, duration, time of day or year of these episodes.

The emission inventory near this Class I area indicates that there are two major point sources about 30 km to the west of the western border of the Class I area. One of these sources is in neighboring Canada. Other smaller sources are also within 50 km of the Class I area.

The EPA believes that due to the proximity of the sources to the Class I area and the prevailing wind patterns, it is possible that the impairment may be attributable, at least in part, to these sources. However, neither EPA nor NPS have sufficient documentation which would support an attribution decision at this time. The EPA, in cooperation with the NPS, has installed photographic monitoring equipment in Voyageurs National Park in order to develop the type of information necessary to make this decision. In addition, the EPA needs information on the frequency and severity of the impairment episodes to determine whether to attribute the impairment to either of the facilities. The EPA is deferring a decision on the necessity of BART requirements and other control measures in the FIP for Minnesota at this time. The EPA intends to propose a decision no later than August 31, 1988, as allowed by the revised settlement agreement.

f. Grand Canyon National Park, Az and Canyonlands National Park, UT.

The DOI submitted photographic documentation of a visibility impairment episode which occurred on January 19, 1988. The impairment also was recorded in vistas associated with Bryce Canyon National Park. Due to the placement of the cameras, it is not clear whether the impairment is within the boundaries of Bryce Canyon National Park.

This type of impairment episode is believed to occur during winter inversion conditions which frequently occur. Although NPS has documented impairment in grand Canyon, Canyonlands, and Bryce Canyon area for a number of years, it believes that only the winter episodes may be attributable to a specific source. Summertime impairment is believed to be cause by regional haze.

There are a number of major point sources and small urban sources near these Class I areas but EPA is not able to identify any specific source which is causing the impairment from the information provided by the NPS. The NPS and other interested parties are implementing a major research program in an attempt to better characterize and identify the sources of this impairment. The EPS is, therefore, deferring a decision on the necessity of BART and other control measures in the FIP's for Arizona and Utah in order to evaluate the results of this study. The EPA recognizes that this is a research program and may not provide definitive answers to its regulatory questions. Nevertheless, EPA believes that NPS should have the opportunity to complete this study before making any decision regarding the necessity for BART and other control measures in the FIP for Arizona. The EPA will propose a decision on the necessity for BART or other control requirements no later than August 31, 1988, as the provisions of the settlement agreement allow. The EPA is soliciting comments on this approach.

g. Saguaro Wilderness and Petrified Forest National Park, AZ. Saguaro National Monument consists of two sections; one is east of, and one is west of, the city of Tucson. The NPS survey noted the existence of an elevated haze seen both within the Class I area and within the vistas associated with the Class I area. Although no record has been kept to document this impairment, the survey note the occurrence of a uniform haze during stagnant meteorological conditions in the winter when looking toward the city of Tucson.

The NPS survey noted the occurrence of a yellowish-brown layered haze in the Petrified Forest National Park. The NPS believes this may be attributable, at least in part, to emissions from power plants in the area. The field personnel have kept a record of impairment episodes.

The emission inventory for Arizona indicates the existence of two power plants within 50 km of Petrified Forest. There are a number of power plants and smelter operations within 100 km of

Saguaro Wilderness. There are also several urban areas, including the City of Tucson, near these two Class I areas.

The EPA is deferring a decision on the necessity of BART requirements and other control measures for the State of Arizona because although the impairment in Petrified Forest may be attributable, at least in part, to emissions from sources near the park, additional information is necessary before decisions on the necessity for BART requirements or other control measures are made. The EPA in cooperation with the NPS is working to develop a monitoring program including the installation of a camera in Petrified Forest National Park to further document the impairment in Petrified Forest and Saguaro Wilderness. In addition, EPA and the NPS are evaluating the record associated with Petrified Forest.

80084 **Federal Register**/Vol. 45, No. 233/Tuesday, December 2, 1980/Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[AD FRL-1671-8, Docket No. A-79-40]

Visibility Protection for Federal Class I Areas

AGENCY: U.S. Environmental Protection Agency [EPA].

ACTION: Final rulemaking.

SUMMARY: Today's action promulgates regulations to assure reasonable progress toward "the prevention of any future, and the remedying of any existing, impairments of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." The responsibility for developing the program and making any substantive decisions will lie with the thirty-six States which contain mandatory Class I Federal areas.

The principal effect of these regulations will be to establish long-range goals, a planning process, and implementation procedures. Preliminary analyses have identified no existing sources which will need to install additional controls under these regulations. Some large new sources will be required to analyze their potential impact on visibility in mandatory Class I Federal areas the State will retain final authority over construction permits for those sources.

Several changes have been made to the regulations as proposed on May 22, 1980. Included among the more significant changes are requirements giving States more authority over substantive decision and provisions that the State may consider energy and economic impacts when evaluating sources which have visibility impacts on integral vistas of mandatory Class I Federal areas.

DATE: These rules are effective January 2, 1981. Petitions for review of these regulations must be filed in the United States Court of Appeals for the District of Columbia by February 2, 1981.

ADDRESS: Docket No. A-79-40, containing material relevant to

this action, is located in West Tower Lobby, Gallery 1, U.S. Environmental Protection Agency, Central Docket Section, 401 M Street, S.W., Washington, D.C. 20460. The docket may be inspected between 8:00 a.m. and 4:00 p.m. on weekdays and a reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT:

Mr. Johnnie L. Pearson, Office of Air Quality Planning and Standards (MD-15), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Telephone: (919) 541-5497.

I. Background

A. The Statute

Section 169A of the Clean Air Act requires visibility protection for mandatory class I Federal areas where it has been determined that visibility is an important value. "Mandatory class I Federal areas" are all international parks and certain national parks and wilderness areas as described in Section 162(a) of the Clean Air Act [Act]. To work toward meeting the national visibility goal set out in Section 169A(a)(1) of the prevention of any future and remedying of any existing man-made visibility impairment in such areas, Section 169A requires that the:

- Department of Interior review all mandatory Class I Federal areas and identify those where visibility is an important value [Section 169(a)(2)].

- EPA, after consulting with the Department of Interior, promulgate a list of the mandatory Class I Federal areas in which visibility is an important value [Section 169A(a)(2)].

- EPA prepare a report to Congress on methods for achieving progress toward the visibility goal. The report must include methods to determine visibility impairment, modeling techniques, methods for preventing and remedying man-made air pollution and resulting visibility impairment, and a discussion of visibility related pollutants and sources [Section 169A(a)(3)].

- EPA promulgate regulations to assure reasonable progress toward the national visibility goal which will, among other things,

(1) provide guidelines to States for including visibility protection in State Implementation Plans (SIPs); (2) require SIPs to include emission limits, schedules for compliance, and other measures as may be necessary to make reasonable progress toward meeting the national visibility goal; and (3) provide guidelines for determining emission limitations representing best available retrofit technology for fossil fuel fired power plants in excess of 750 megawatts generating capacity [Section 169A(a)(4) and Section 169A(b)].

- EPA approve or disapprove SIP revisions submitted in response to the promulgated requirements [Section 110(a)(2)] and promulgate regulations for those States which submit inadequate regulations or fail to submit regulations in response to EPA's requirements [Section 110(c)].

In addition, Congress also included visibility protection requirements in the preconstruction review for prevention of significant deterioration (PSD) [Section 165] by:

- Giving Federal Land Managers "an affirmative responsibility" to protect the visibility values of a Federal Class I area and the right to recommend the denial of a PSD permit if an adverse impact on visibility would result, even if the Class I PSD increments would be met [Section 165(d)].

Requiring PSD permit applicants to analyze the visibility at the site of the proposed construction and any area potentially affected by the proposed construction [Section 165(e)].

B. Rulemaking

On November 30, 1979, the Agency published an Advanced Notice of Proposed Rulemaking (ANPRM) (44 FR 69116), and also published its final determination under Section 169A(a)(92) of mandatory Class I Federal areas where visibility is an important value (44 FR 69122). The purpose of that ANPRM was to inform the public of the impending regulatory development effort and to solicit comment on various major issues needing resolution during regulatory development. EPA, on May 22, 1980 (45 FR 34762), published a Notice of Proposed Rulemaking (NPRM) and solicited comments on the regulatory approach presented. The Agency also

announced two public hearings which were held in Washington, D.C., (June 30, 1980) and Salt Lake City, Utah, (July 2, 1980) for the purpose of receiving oral public comment on the proposed rules. The Agency subsequently announced (45 FR 49110, July 23, 1980) the availability of certain draft guideline documents, solicited comments on those guidelines, and established a public hearing for the purpose of obtaining oral public comment on these guidelines. This hearing was held on August 25, 1980 in Washington, D.C. On July 31, 1980 (45 FR 50825), EPA extended the public comment period on the regulations to August 22, 1980 in order to provide sufficient time for commenters to consider the guidelines and their effect on the proposed regulatory program. Transcripts of all public hearings and copies of the public comments received have been placed in Docket A-79-40. The Agency received a total of 383 comments from the public relating to the various aspects of the proposed programs. This promulgation is based upon the material in the docket including EPA's review and consideration of all comments received during the public comment period. Notice of the changes made from the proposal is in the "Supplemental Statement of Basis and Purpose" which follows the regulatory language. Additionally, EPA has prepared a document, "Summary of Comments and Responses on the May 22, 1980 Proposed Regulations for Visibility Protection for Federal Class I Areas," which specifically responds to the comments received. This document has been placed in Docket A-79-40 and, depending upon available supplies, a copy may be obtained from: EPA Library (MD-35), U. S. Environmental Protection Agency, Research Triangle Park, N.C. 27711.

A copy of this document will be sent to all commenters on the ANPRM, NPRM, and guidelines.

C. Document Availability

The following documents were developed by EPA and should be of use to persons affected by today's promulgation. These documents are in Docket No. A-79-40 and are also available from the sources indicated below.

(1) "Protecting Visibility: An EPA Report to Congress" (EPA-450/5-79-008). National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

(2) "The Development of Mathematical Models for the Prediction of Anthropogenic Visibility Impairment" [EPA-450/3-78-110a, b, c), National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161 (PB 293119, PB 293120, PB 293121).

(3) "Guidelines for Determining Best Available Retrofit Technology for Coal-Fired Power Plants and Other Major Stationary Sources," (EPA-450/3-80-009b), National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

(4) "Assessment of Economic Impacts of Visibility Regulations," National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

(5) "User's Manual for the Plume Visibility Model (PLUVUE)," (EPA 450/5-80-032) National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

(6) "Workbook for Estimating Visibility Impairment," (EPA 450/4-80-031) National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

(7) "Interim Guidance for Visibility Monitoring," (EPA 450/2-80-082) National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

III. Program Overview

This preamble provides a brief description of the regulatory program, serving to introduce the specific regulatory language. Following the regulatory language is a "Supplemental Statement of Basis and Purpose" which discusses the major changes between the final and proposed rules. In addition, we have placed in Docket No. A-79-40 a document containing EPA's response to comments.

The Problem

Congress has set aside certain international parks and national wilderness areas, national memorial parks, and national parks

(mandatory Class I Federal areas) to preserve and enhance their beauty for present and future generations to enjoy. The intrinsic beauty of these areas, however, has been threatened due to visibility- degrading pollution.[1] Visibility is commonly referred to as the relative ease with which objects can be seen through the atmosphere under various conditions. Congress became aware of the need to protect visibility in these areas and directed EPA through the Clean Air Act to explore the relationship between man-caused pollution and visibility impairment.

From this research we can say there are generally two types of air pollution which reduce or impair visibility:

(1) Smoke, dust, colored gas plumes, or layered haze emitted from stacks which obscure the sky or horizon and are relatable to a single source or a small group of sources, and (2) widespread, regionally homogeneous haze from a multitude of sources which impairs visibility in every direction over a large area.

These types of pollution are caused by factories, plants, and other sources that emit particles and gases into the air. These substances either absorb or scatter the light, thus reducing the amount of light a person can receive from a viewed object. The practical effect is that impaired visibility degrades the aesthetic value of surrounding landscape by (1) discoloring the atmosphere to produce a visible plume, (2) whitening the horizon and causing objects to appear flattened so that landscape colors and textures become less discernible, or (3) in the case of a discernible plume, obscuring some portion of the landscape.

The Program

A Phased Approach to the Problem

Congress, in recognition of the need to protect the aesthetic value of visibility in national parks and wilderness areas, established

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[1]The National Parks and Conservation Association, in addition to many individual commenters, stated in comments on the proposed regulations for the protection of visibility that air pollution may well be the major threat to the national parks in the 1980's.

a national visibility goal. The goal specifies that existing pollution be remedied and future pollution that would interfere with visibility in mandatory Class I Federal areas be prevented. We reviewed the techniques for identifying, measuring, predicting, and controlling visibility impairment, and in November 1979, published "Protecting Visibility: An EPA Report to Congress" which discusses in detail the present scientific knowledge of visibility, including monitoring, modeling, and control of visibility impairment.

As described in that report, we determined that the present mathematical models and monitoring techniques show promise for being used in a regulatory manner. However, these techniques must be further evaluated according to standard Agency procedures before we can routinely require their use in a regulatory program for sources, either new or existing, that may impair visibility. In some instances we can identify the origin of visibility impairment caused by a single source or small group of sources without the use of sophisticated analytical techniques. Simple monitoring techniques such as visual observation (either ground based or with aircraft) can often identify sources which contribute to the impairment.

Recognizing the need to initiate protection as soon as possible, while also realizing that certain scientific and technical limitations do exist, we are today promulgating, essentially as proposed, a phased approach to visibility protection. Representatives of industry, environmental groups, States, Federal Land Managers, and the public generally supported this phased approach to regulatory development.

Phase I of this program will:

1. Require control of impairment that can be traced to a single existing stationary facility or small group of existing stationary facilities,

2. Evaluate and control new sources to prevent future impairment, and

3. Require States to adopt strategies such as review and possible control of other existing sources not meeting the more stringent

source-size requirements for existing stationary facilities in order to remedy existing and prevent future visibility impairment.

Information derived from modeling and monitoring can, in some cases, aid the States in development and implementation of the visibility program. In the first phase, the States are required to consider available modeling and monitoring information. The use of such information will be at the discretion of the State, and the States are not required to establish monitoring networks or perform modeling analyses.

Future phases will extend the visibility program by addressing more complex problems such as regional haze and urban plumes. We will propose and promulgate future phases when improvement in monitoring techniques provides more data on source-specific levels of visibility impairment, regional scale models become refined, and our scientific knowledge about the relationships between emitted air pollutants and visibility impairment improves.

The Program—In Detail

We are promulgating regulations that require the 36 States containing mandatory Class I Federal areas to submit revisions to their SIPs within 9 months.[2] These regulations require that these States (1) revise their SIPs to assure reasonable progress toward the national visibility goal of preventing future and remedying existing impairment of visibility in mandatory Class I Federal areas, (2) determine whether certain existing stationary facilities should install the Best Available Retrofit Technology (BART) for controlling those pollutants which impair visibility (3) develop, adopt, implement, and evaluate long-term strategies for making reasonable progress toward remedying existing and preventing future impairment in the mandatory Class I Federal areas, and (4) adopt certain measures

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[2]We did not identify, nor did any commenters identify any State that did not contain a mandatory Class I Federal area, but which could contain a source the emissions from which could reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area.

regarding visibility impacts that will supplement the State's new source review program.

The assistance of the Federal Land Managers, who are intimately familiar with the mandatory Class I Federal areas because of their responsibility for managing the areas, will be important to the State during development of a program to meet these requirements. Since coordination among the States, the Federal Land Managers, and EPA will be necessary to develop and implement an effective visibility protection program, we expect the State and the Federal Land Manager to work closely during the entire SIP development process. While the State retains the primary responsibility for developing an effective visibility program, the Federal Land Manager has the responsibility of characterizing the visibility of the mandatory Class I Federal areas. Therefore, the State should consider carefully the Federal Land Manager's comments and recommendations. These two must work together to ensure that visibility in these areas is protected. EPA's responsibility is to (1) promulgate visibility regulations which would require States to revise their State Implementation Plans (SIPs), (2) provide guidance to States for implementing the program (3) continue research into visibility for use in future phases, and (4) promulgate regulations for States which submit inadequate regulations or fail to submit regulations in response to these requirements.

Part of the participation process may involve the identification of integral vistas by the Federal Land Manager. An integral vista is an important view from a point in the mandatory Class I Federal area of a scenic landmark outside the boundary of the area. The vista must be important to the visitor's visual experience of the area. This identification must be in accordance with criteria formally adopted by the Federal Land Manager and must occur on or before December 31, 1985. The State is not required to analyze impairment of a vista if it determines that the Federal Land Manager's identification of the vista was not in accordance with these criteria.

Under the authority of § 169A, the regulations require the States to consider the potential of new or existing sources to impair visibility of an integral vista. This consideration may include the costs of compliance, the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, the remaining useful life of the source, and the degree of improvement in visibility anticipated to result from control. A State, in its initial SIP revision, would have to consider an integral vista only if this vista was identified at least 6 months before plan submission or plan revision. With regard to permitting new sources, integral vistas identified at least 12 months before submission of a complete permit application would have to be protected unless the Federal Land Manager provided notice of and opportunity for public comment on the integral vista in which case the impact of the new source must be reviewed if the integral vista is identified at lest 6 months before submission of the complete permit application. This requirement to protect integral vistas is part of the visibility protection program promulgated today and is not part of the PSD program.

EPA is currently reviewing new sources under the PSD provisions (40 CFR 52.21) for many States. New sources reviewed by EPA will be required under the authority of § 169A to assess their potential visibility impacts on integral vistas if identification of the integral vista meets the above criteria prior to the submission of a complete PSD permit application to the EPA.

A. BART Requirements.

1. *The State or the Federal Land Manager determines whether, within any mandatory Class I Federal area, there exists any impairment of visibility.* This impairment must be identified at least 6 months prior to SIP submission (or submission of any SIP revision) in order to allow the State enough time to develop a plan to remedy the impairment. This provides the necessary "trigger" to inform the State if it needs to be concerned with any existing impairment, or if it needs to focus only on prevention of future impairments. We are defining "impairment" as any "humanly perceptible change in visibility (visual range, contrast, coloration)

from that which would have existed under natural conditions." Impairment which is identified too late to be addressed by the initial plan revision will need to be addressed during the periodic review of the long-term strategy.

2. *The State will identify the existing stationary facilities which cause the visibility impairment.* Existing stationary facilities are certain sources which emit more than 250 tones per year, and (1) were not in operation prior to August 7, 1962, or (2) were reconstructed after that date. During Phase I of the visibility program, the State is required to determine if visibility impairment in any mandatory Class I Federal area "is reasonably attributable" to an existing stationary facility through visual observation or any other technique the State deems appropriate. The Federal Land Manager may provide the State with a list of sources suspected of causing or contributing to visibility impairment in the mandatory Class I Federal area.

3. *The State will perform a BART analysis on existing stationary facilities identified as impairing visibility.* In the BART analysis, the State identifies the pollutant of concern and what additional air pollution control technologies are to be required in order to reduce existing visibility impairment. We believe that while pollutants may cause or contribute to visibility impairment, the pollutants of primary concern under this Phase I program are particulate matter and NO_2. Emissions of SO_4 primarily contribute to regional haze which is beyond the scope of this Phase I program. Therefore, we expect very few, if any, BART analyses for SO_4 in this phase of the program. It should, however, be noted that we expect that the Phase II program will result in control of pollutants associated with regional haze and urban plumes which affect mandatory Class I Federal areas. We therefore expect that sources would be analyzed, at that time, for all pollutants causing or contributing to these types of visibility impairment.

After the State identifies the source of the pollutant causing the visibility impairment, the State then identifies those control techniques that could improve visibility. If a control technique

exists that would improve visibility in the mandatory Class I Federal area, then the State proceeds with the BART analysis, but if the most stringent control available would not result in any improvement in visibility, then the State may stop the analysis at this point. For example, while control techniques exist for SO_2, the reductions achievable by the best available technology, generally defined by current new source performance standards, may not be sufficient to achieve any perceptible improvements in visibility. In such cases the State is not obligated to require controls at this time.

If control techniques do exist that would improve visibility, the State begins studying alternative control strategies. The State should consider, on a case-by-case, how much various alternative control techniques would cost, the energy and environmental impact of the controls, what air pollution technologies the source already has in place, the remaining useful life of the source, and to what degree the control alternatives would improve visibility. In order to assist States in the analysis of BART, the Agency has developed "Guidelines for the Determination of Best Available Retrofit Technology for Coal-fired Power Plants and Other Existing Stationary Facilities." For large power plants, BART must be determined pursuant to this guideline.

The last stage of the BART analysis is for the State to specify an emission limitation that reflects BART. The source must then install, operate, and maintain the control technology to meet the emission limitation.

4. *The State must reanalyze ceretain (sic) existing stationary facilities that emit pollutants which were not controlled in a prior BART review.* This reanalysis could occur when the Administrator determines new technology is available which would more effectively control a pollutant which interferes with visibility. This reanalysis is only required where the imposition of controls representing BART have not been previously required for the specific pollutant. In this case, based upon the BART criteria, the State must require sources to install those controls called for by the analysis.

5. *The source may apply to the Administrator for an exemption from BART on the basis that the source does not cause or contribute to significant impairment of visibility.* The source must notify the Federal Land Manager of its application and must receive written concurrence from the State on the application. To receive an exemption, the source must demonstrate to the Administrator that it does not cause or contribute to significant impairment of visibility.

By significant impairment we mean a level of impairment that interferes with the visitor's visual experience of the area. When applying for an exemption, a source should address the frequency, extent, time, intensity and duration of the impairment. If the Administrator grants an exemption, the Federal Land Manager must concur before the exemption will become effective.

B. Monitoring of Visibility Impacts

1. *The State will develop a monitoring strategy.* The State in developing this strategy would assess the need for visibility monitoring in the development and implementation of the State's visibility protection program taking into consideration available and forthcoming monitoring techniques, current research, and guidelines.

2. *The State will provide for consideration of monitoring requirements for new sources.* The State should assess on a case-by-case basis the need for monitoring by a source, as part of the new source review process, to provide information on any potential impacts on visibility in the Federal Class I area review process. This assessment will be based upon available data and the adequacy of available monitoring techniques.

3. *The State will evaluate any available monitoring data.* Any existing monitoring data available to the State should be incorporated into the State's decision-making process for BART determinations and new source review decisions.

C. Development of the Long-Term Strategy.

The regulations require each plan to include a long-term (10-15 year) strategy for making reasonable progress toward remedying

existing and preventing future visibility impairment. The requirements are summarized below.

Remedying Existing Impairment

Some of the measures the State is to consider for remedying existing impairment are:

1. *Existing land management plans to protect or enhance visibility in the mandatory Class I Federal area and other plans relating to local use around the area that may affect visibility in these areas.* This will also be useful in developing the part of the long-term strategy relating to prevention of future impairment.

2. *The effectiveness of existing air pollution control programs in reducing visibility impairment.* For example, the attainment and maintenance of National Ambient Air Quality Standards may reduce or eliminate visibility impairment in mandatory Class I Federal areas. If this is the case, the State should explain how this would contribute to reasonable progress.

3. *Additional emission limitations and schedules for compliance for uncontrolled or poorly controlled sources not covered by BART.* This recognizes that States may have to control sources not covered by BART to make reasonable progress toward the national goal.

4. *Retirement of existing sources and replacement with new, well controlled facilities.* The construction of new sources which will ensure the early or scheduled retirement of older, less well controlled sources can greatly aid progress toward the national visibility goal over the long term.

Preventing Future Impairment

The States must review all major stationary sources and major modifications as defined in EPA's Prevention of Significant Deterioration (PSD) regulations for their anticipated impacts on visibility in mandatory class I Federal areas.

Under section 307, discussed below, and § § 51.24 and 51.18 of EPA's existing PSD and new source regulations, a new major stationary sources must be reviewed for, among other things, its effect on visibility in Federal Class I areas. Thus, implementation

of the PSD program will go a long way toward preventing future visibility impairment in mandatory Class I Federal areas.

There are, however, source (*sic*) which are not subject to the PSD rules because the PSD rules do not call for the review of a major stationary source locating in a "nonattainment" area, even if that source would impair visibility in a mandatory Class I Federal area. Today's action requires an analysis of visibility impacts by all new sources which might impair visibility in a mandatory Class I Federal area irrespective of their proposed location. However, unlike review under the PSD provisions, the State may, for these sources, consider cost, energy and other relevant factors in determining whether to permit construction of the new source.

The State will review its strategy in consultation with the Federal Land Manager and report its finding to the public and the Administrator at least every three years. We believe that the periodic review of the long-term strategy is an important part of assuring reasonable progress toward the national visibility goal. Since the visibility program is new and evolving, a periodic review is necessary to 1) take into account advances in technology, 2) evaluate progress toward the goal, 3) evaluate specific program effectiveness, 4) consider any recently identified integral vista, and 5) provide a reassessment of the reasonableness of measures incorporated into the long-term strategy. In this review of the long-term strategy, the regulations would require certain analyses, including: (1) an assessment of the progress achieved in remedying existing impairment, (2) an assessment of the strategy's long-term ability to prevent future impairment,and (3) identification of advances in technology and consideration of additional measures that may be necessary to make reasonable progress toward the national goal. This periodic review will require an evaluation of available human observations, photo-documentation, and monitoring data.

III. New Source Review Requirements for Visibility Impacts

EPA's PSD regulations require that a proposed major stationary source or major modification evaluate its potential impact on visibility and, if the source would cause an adverse impact on

visibility in a Federal Class I area, that the State deny the permit. In this action we are promulgating a definition of "adverse impact" and clarifying certain procedural relationships between the Federal Land Manager and the State in the review of new source impacts on visibility in Federal Class I areas and integral vistas.

As the first step in the review process, the State notifies the Federal Land Manager of any potential new source that may impact visibility in a Federal Class I area. The State and Federal Land Manager then initiate consultation which will continue throughout the permitting process. Early consultation in the permitting process will be valuable and the State should notify the Federal Land Manager of the source that may potentially affect the Federal Class I area. This notification should take place at the time the State reasonably believes that a source intends to make an application for a permit that would affect the area. Under EPA's PSD regulations and § 165 of the Act, the Federal Land Manager may demonstrate to the State that the source will have an adverse impact on visibility in the Federal Class I area even where the PSD Class I air quality increments are not violated. If the State agrees with the Federal Land Manager's assessment that the source will "adversely impact" visibility in the Federal Class I area, then the State will deny the permit. If the State disagrees with the Federal Land Manager's demonstration, then it will provide a written explanation of its findings to be made available to the public prior to public hearings on the permit. Where the disagreements on the permitting of a source exist between the State and the Federal Land Manager, the State may desire third-party input into the decision process. In such cases, the Administrator or appropriate Regional Administrator will be available to assist the State.

In addition, under authority of § 169A of the Act, Section 307 requires an analysis of the potential visibility impacts of new sources on integral vistas identified at least 12 months before submission of a complete permit application. However, if the Federal Land Manager provides an opportunity for public comment on the potential integral vista the analysis must include the impacts of any

integral vista so identified at least 6 months prior to the submission of a complete permit application. This protection for integral vistas is governed not by the "adverse impact" test of § 165 and the PSD program, but rather by consideration of the long-term strategy of § 169A including cost, energy, and other relevant factors.

Finally, Section 307 allows the State to require the source to monitor visibility at the proposed site or potentially affected area as part of the PSD permit application.

IV. Regulatory Impact

The immediate, principal benefit of these regulations will be (1) the reduction or elimination of impacts reasonably attributable to specific existing sources, and (2) further definition of procedures for the review of new sources. The focus of these regulations will be principally in the West since western areas have generally good visibility now and are extremely sensitive to degradation. Also, the majority of the mandatory Class I Federal areas are located in the western United States. We recognize that States may permit construction of new sources which may result in visibility impairment of integral vistas if, in the State's judgment, such impairment is justified by the cost of additional controls, the time necessary to install controls, the energy and non-air quality environmental impacts of additional controls, and the useful life of the source.

The phased approach of these regulations will limit the amount of resources the States will have to expend on revising their SIPs. Preliminary indications are that few, if any, existing stationary facilities will have to retrofit controls. The one major requirement applicable to all 36 States is the development of a long-term strategy for making reasonable progress toward the national visibility goal. EPA believes, however, that many of the basic elements of an acceptable strategy already exist within the framework of other air pollution programs. Therefore, the State will need to examine the feasibility and efficacy of only a few other measures to determine if they should or need to be included in the long-term strategy.

The new source review program required by these regulations takes into account the new source review programs which the States are now called on to implement under the PSD and nonattainment provisions of the Clean Air Act.

As commenters, including major industry representatives, noted, it is impossible to prepare a precise regulatory analysis since the State has substantial discretion in developing a visibility protection program. However, since there will be individual cost considerations for any source which may be covered by the BART or reasonable progress requirements, no source is prejudiced by a less than perfect regulatory analysis now.

A. Existing Source Impacts

The Agency released for comment along with the proposed visibility regulations a draft analysis of the impact of these regulations on existing sources. This analysis used visibility screening curves generated by a theoretical predictive model to identify existing stationary facilities which impair visibility in mandatory Class I Federal areas. The analysis identified a number of large power plants as potential BART candidates. In order to more realistically assess the impact of these regulations, EPA discussed with the Federal Land Managers the facilities identified in the initial screening process. We found that this initial screening overstated the potential impact of these regulations. Most of the sources which were initially identified as potential BART candidates are not now anticipated to be affected because the visibility impairment cannot be reasonably attributed to these facilities. Other sources identified in this analysis are not now believed to be affected by these regulations because either existing problems are currently being dealt with by other air quality programs or because currently available control techniques will not perceptibly improve visibility. The analysis also examined the possible economic impact on other existing stationary facilities and did not find any mandatory Class I Federal area in which visibility impairment might be reasonably attributable to any such source.

Since it is virtually impossible to perform an exhaustive analysis, there may yet be impairment of visibility in a mandatory Class I Federal area which we can reasonably attribute to an existing stationary facility.

As noted above, the State will need to examine the existing impairment in the mandatory Class I Federal areas and determine if BART is necessary for existing stationary facilities. There may also be sources which do not qualify as existing stationary facilities, but for which an impact on visibility is reasonably attributable. The need to make reasonable progress will require that the State examine these sources and determine what action, if any, is necessary to ensure progress toward the national visibility goal.

B. New Source Impacts

Most new sources that may impair visibility in the mandatory Class I Federal areas are currently subject to review under the PSD regulations. These visibility regulations would impose only a few additional procedural requirements and should therefore have little additional impact on these sources. The regulatory impact of the PSD program was addressed in that rulemaking.

These regulations do, however, ensure that certain sources exempt from the PSD regulations because of geographic criteria will be adequately reviewed for their potential impact on visibility in the mandatory Class I Federal area. Where a source could reduce visibility, several options are available to the State and the source. The State could (1) require the source to analyze alternative sites, (2) impose additional control requirements, (3) limit the source's capability to emit the pollutant which is expected to cause the impairment by limiting the source's operating conditions, or (4) deny the source permission to construct. Among the options available to the source are modifying its proposed operating conditions to reduce its potential impact and locating at other sites where the potential impact on the area is expected to be less.

While it is difficult to predict the overall marginal impact of these regulations on new sources, we can state those geographic areas where we would expect the major impact to occur. Large

sources desiring to locate close to Federal Class I areas in the western U.S., particularly if they emit NO_2 may encounter difficulty due to the relative inability to control NO_2 and because the visibility impact is frequently a coherent plume. In addition, dispersion conditions around many of these areas, primarily caused by their topography, will generally not enable emissions to disperse rapidly enough to prevent a coherent plume.

V. Judicial Review

Under Section 307(b)(1) of the Clean Air Act, judicial review of these regulations for the protection of visibility is available only by the filing of a petition for review in the United States Court of Appeals for the District of Columbia within 60 days of today. Under Section 307(b)(2) of the Clean Air Act the requirements which are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

These rules are issued under the authority granted in Sections 110, 114, 121, 160-169, 169A, and 301 of the Clean Air Act, 42 USC 7410, 7414, 7421, 7470-7479, 7491, and 7601.

Dated: November 21, 1980.

Douglas M. Costle.

Administrator.

The Administrator establishes a new Subpart P of Part 51, Title 40 of the Code of Federal Regulations to read as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

Subpart P—Protection of Visibility

See

51.300 Purpose and applicability.

51.301 Definitions.

51.302 Implementation control strategies.

51.303 Exemptions from control.

51.304 Identification of integral vistas.

51.305 Monitoring.

51.306 Long-term strategy.

51.307 New source review.

Authority: Secs. 110, 114, 121, 160-169, 169A, and 301 of the Clean Air Act. (12 U.S.C. 7410, 7414, 7421, 7470-7479, and 7601).

§ 51.300 Purpose and applicability.

(a) Purpose. The primary purposes of this Subpart are (1) to require States to develop programs to assure reasonable progress toward meeting the national goal of preventing any future, and remedying and existing, impairment of visibility in mandatory Class I Federal areas which impairment results from man-made air pollution, and (2) to establish necessary additional procedures for new source permit applicants, States, and Federal Land Managers to use in conducting the visibility impact analysis required for new sources under § 51.24.

(b) Applicability. (1) The provisions of this Subpart are applicable to: (i) each State which has a mandatory Class I Federal area identified in Part 81, Subpart D, of this title, and (ii) each State in which there is any source the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area. (2) The provisions of this Subpart are applicable to the following states:

(i)Alabama

(ii)Alaska

(iii)Arizona

(iv)Arkansas

(v)California

(vi)Colorado

(vii)Florida

(viii)Georgia

(ix)Hawaii

(x)Idaho
(xi)Kentucky
(xii)Louisiana
(xiii)Maine
(xiv)Michigan
(xv)Minnesota
(xvi)Missouri
(xvii)Montana
(xviii)Nevada
(xix)New Hampshire
(xx)New Jersey
(xxi)New Mexico
(xxii)North Carolina
(xxiii)North Dakota
(xxiv)Oklahoma
(xxv)Oregon
(xxvi)South Carolina
(xxvii)South Dakota
(xxviii)Tennessee
(xxix)Texas
(xxx)Utah
(xxxi)Vermont
(xxxii)Virginia
(xxxiii)Virgin Islands
(xxxiv)Washington
(xxxv)West Virginia
(xxxvi)Wyoming

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[FRL 1487-2, Docket No. A-79-40]

Visibility Protection for Federal Class I Areas

Agency: U.S. Environmental Protection Agency [EPA].

Action: Proposed rulemaking

SUMMARY: Section 169A of the Clean Air Act requires EPA to promulgate regulations to assure reasonable progress toward the congressionally declared goal of "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." Today's action proposes regulations which would require thirty-six States to develop and implement programs to address the congressionally declared national goal. EPA is also making available today certain guidelines which would provide analytical tools for carrying out the regulations. This proposal would also provide additional procedures for conducting visibility analyses under EPA's prevention of significant deterioration regulations. This notice establishes a 75-day comment period and schedules two legislative-type public hearings for the purpose of receiving comments on both the proposal and the guidelines.

DATES: Written comments must be postmarked no later than August 5, 1980. Public hearings will be held on June 30, 1980 (Washington, D.C.), and July 2, 1980 (Salt Lake City, Utah).

ADDRESS: All written comments should be submitted (in duplicate, if possible) to: Central Docket Section (A-130). Docket No. A-79-40. U.S. Environmental Protection Agency. 402 M Street, S.W., Washington, D.C. 20460.

Docket No. A-79-40, containing material relevant to this action, is located in the U.S. Environmental Protection Agency, Central Docket Section, Room 2902, 401 M Street, S.W., Washington,

D.C. 20480. The docket may be inspected between 8:00 a.m. and 4:00 p.m. on weekdays and a reasonable fee may be charged for copying.

Public hearings are scheduled for the following locations:

(a) Room 3908, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C., 9:00 a.m. (EDT), June 30, 1980.

(b) Little Theater, Salt Palace, 100 S.W. Temple, Salt Lake City, Utah, 9:00 a.m. (MDT), July 2, 1980.

FOR FURTHER INFORMATION CONTACT:

Mr. Johnnie L. Pearson, Office of Air Quality Planning and Standards (MD-15), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Telephone: (919) 541-5497.

I. Supplementary Information

A. Public Hearings

EPA is announcing two legislative-type public hearings on the proposed regulations. These public hearings will be held in Washington, D.C. and Salt Lake City, Utah. The purpose of these public hearings is to receive public comment on the proposed regulations. A verbatim transcript of each hearing will be made and placed in Docket No. A-79-40, Central Docket Section (A-130), U.S. Environmental Protection Agency, Room 2902, 401 M Street, S.W., Washington, D.C. 20460.

Any person who wishes to speak at the meeting should, by June 23, 1980, notify the Information Contact listed above of the intent to make an oral presentation, giving name, address, telephone number, and length of presentation. In order to permit as many views as possible, presentations will, in general, be limited to 15 minutes. Additional time will be made available based upon the number of commenters and the demonstrated need for additional time. EPA will develop a schedule for presentations based upon the notices it receives. Persons not providing prior notice but desiring to speak will be accommodated as time permits. Persons with a written statement should submit three copies of the statement to aid

in its prompt evaluation. A copy of any written statement received at the hearing will be placed in the docket noted above.

B. Request for Extension of Comment Period

The Agency recognizes the substantial amount of material presented by this proposal and accompanying guidelines but is confident the 75-day comment period and the two public hearings present ample opportunity for the written and oral presentations of data, views, and arguments, especially since this proposal was preceded by an Advance Notice of Proposed Rulemaking (ANPR), published November 30, 1979 (44 FR 69116), which itself established a 30-day written comment period and three public workshops that were held in Seattle, Washington; Salem, Oregon; and Denver, Colorado, the week of January 20, 1980. Thus, EPA intends to deny any request for extension of the comment period without a showing of extraordinary circumstances. EPA notes, additionally, that any extension of the comment period would seriously jeopardize its ability to promulgate final regulations by November 15, 1980 as it must under an order entered November 5, 1979 in the United States District Court for the District of Columbia in *Friends of the Earth, Inc. v. Costle*, No. 80-3081. This litigation resulted from EPA's inability to promugate [*sic*] regulations by August 7, 1979 as required by Section 169(a)(4) of the Clean Air Act (Act) 42 USC 7491(a)(4).

II. Background

A. The Statute

Section 169A of the Clean Air Act requires visibility protection for mandatory class I Federal areas where it has been determined that visibility is an important value. "Mandatory class I Federal areas" are all international parks and certain national parks and wilderness areas as described in Section 162(a) of the Act. To work toward meeting the national visibility goal set out in Section 169A(a)(1) of the prevention of any future and remedying of any existing man-made visibility impairment in such areas, Section 169A requires that the:

- Department of Interior review all mandatory class I Federal areas and identify those where visibility is an important value [Section 169(a)(2)].

- EPA, after consulting with the Department of Interior, promulgate a list of the mandatory class I Federal areas in which visibility is an important value [Section 169A(a)(2)].

- EPA prepare a report to Congress on methods for achieving progress toward the visibility goal. The report must include methods to determine visibility impairment, modeling techniques, methods for preventing and remedying man-made air pollution and resulting visibility impairment, and a discussion of visibility related pollutants and sources [Section 169A(a)(3)].

- EPA promulgate regulations which will (1) provide guidelines to States for including visibility protection in State Implementation Plans (SIPs); (2) require SIPs to include emission limits, schedules for compliance, and other measures as may be necessary to make reasonable progress toward meeting the national visibility goal; and (3) provide guidelines for determining best available retrofit technology emission limitations for fossil fuel fired power plants in excess of 750 megawatts generating capacity [Section 169A(a)(4) and (b)].

- EPA approve or disapprove SIP revisions submitted in response to the promulgated requirements [Section 110(a)(2)] and promulgate regulations for those States which submit inadequate regulations or fail to submit regulations in response to EPA's requirements [Section 110(c)].

- In addition, Congress also included visibility protection requirements in the preconstruction requirements for prevention of significant deterioration (PSD) in Section 165 of the Act:

- Federal Land Managers have "an affirmative responsibility" to protect the visibility values of a class I area and may recommend the denial of a PSD permit if an adverse impact on visibility would result, even if the class I PSD increments would be met [Section 165(d)].

- PSD applicants must analyze the visibility at the site of the proposed construction and any area potentially affected by the proposed construction [Section 165(e)].

B. Rulemaking

On November 30, 1979, the Agency initiated informal regulatory development by publishing an Advance Notice of Proposed Rulemaking (ANPR) (44 FR 69116). The purpose of this ANPR was to inform the public of this effort and to solicit comments on various major issues which needed resolution during regulatory development. A summary and a copy of all comments received is included in Docket A-79-40. EPA's response to many of those comments is included in the various sections of this preamble. Also on November 30, 1979, EPA published its final determination under Section 169A(a)(2) of mandatory class I Federal areas where visibility is an important value (44 FR 69122).

C. Document Availability

The Agency relied on the documents listed below, which served as background to these proposed regulations. The Agency is soliciting comments, especially on the DRAFT documents. The documents listed as final have previously received substantial public review. Both draft and final documents are in Docket No. A-79-40 and are also available from the sources indicated below.

(1) "Protecting Visibility: An EPA Report to Congress' (EPA-450/5-79-008) (final), will be available shortly from: National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161.

(2) "The Development of Mathematical models for the Prediction of Anthropogenic Visibility Impairment" [EPA-450/3-78-110a, b, c). (final), National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161 (PB 293119, PB 293120, PB 293121).

(3) "Criteria for the Identification of Integral Vistas (draft)." Control Programs Development Division (MD-15), U.S. Environmental Protection Agency, Research Triangle Park, NC

27711. The Agency is proposing to incorporate this guideline by reference in the Federal Register and expects to ask the Director of the Federal Regiser for approval before promulgation.

(4) "Proposed Guidelines for Determining Best Available Retrofit Technoligy [*sic*] for Coal-Fired Power Plants and Other Major Stationary Sources (Draft)," Control Programs Development Division (MD-15), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

The Agency is proposing to incorporate this guideline by reference in the Federal Register and expects to ask the Director of the Federal Register for approval before promulgation.

(5) "Preliminary Assessment of Economic Impacts of Visibility Regulations (Draft)," Control Programs Development Division (MD-15), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711.

III. PROGRAM OVERVIEW

This preamble provides a brief description of the regulatory program, serving to introduce the specific regulatory language. Following the regulatory language is a Supplemental Statement of Basis and Purpose which discusses the reasons why we have taken certain positions in this proposal.

THE PROBLEM

Congress has set aside certain international parks and national wilderness areas, national memorial parks, and national parks (mandatory class I Federal areas) to preserve and enhance their beauty for present and future generations to enjoy. The intrinsic beauty of these areas, however, has been threatened due to visibility degrading pollution. Congress became aware of the need to protect visibility in these areas and directed EPA to explor the relationship between man-caused pollution and visibility.

From this research we can say there are generally two types of air pollution which reduce or impair visibility:

(1) smoke, dust, or colored gas plumes that are emitted from stacks and obscure the sky or horizon relatable to a single source or

a small group of sources, and (2) widespread, regionally homogeneous haze from a multitude of sources which impairs visibility in every direction over a large area.

These types of pollution are caused by factories, plants, and other sources that emit particles and gases into the air. These substances either absorb or scatter the light, thus reducing the amount of light a person can receive from a viewed object. The practical effect is that impaired visibility degrades the aesthetic value of surrounding landscape by either discoloring the atmosphere to produce a visible plume or whitening the horizon and causing objects to appear flattened so that landscape colors and textures become less discernible or, in the case of a discernible plume, obsuring [*sic*] some portion of the landscape.

The Program

A Phased Approach to the Problem

Congress, in recognition of the need to protect such aesthetics declared as a national visibility goal the remedying of existing pollution and the prevention of any future pollution that interferes with visibility in mandatory class I Federal areas. We reviewed the techniques for identifying, measuring, predicting, and controlling visibility impairment, and in November, 1979, published "Protecting Visibility: An EPA Report to Congress" which discusses in detail the present scientific knowledge of visibility, including monitoring, modeling, and control of visibility impairment.

As described in that report, we determined that the present mathematical models and monitoring techniques, while showing promise, should be evaluated further before they are routinely required in a regulatory program which applies to existing sources that impair visibility. However, in some instances we can identify the origin of visibility impairment caused by a single source or small group of sources without the use of sophisticated analytical techniques. Simple monitoring techniques such as visual observation (either ground based or with aircraft) can often identify which source contributes to the impairment.

Modeling and monitoring techniques which address impairment caused by single sources will soon be available. Similar techniques which deal with multiple source problems (regional haze and urban plumes) need additional research and will not be available for some time.

Recognizing the need to initiate protection as soon as possible while also realizing that certain scientific and technical limitations do exist, we are proposing a phased approach to visibility protection. Phase I of this program would:

1. Require control of impairment that can be traced to a single major source or small group of sources.

2. Evaluate and control new sources to prevent future impairment, and

3. Require States to adopt other strategies to remedy existing and prevent future visibility impairment.

Future phases will further implement the visibility program by addressing more complex problems such as regional haze and urban plumes. We will propose and promulgate future phases when improvement in monitoring techniques provides more data on source specific levels of visibility, regional scale models become refined, and our general scientific knowledge of visibility improves.

Even though we are calling these proposed regulations "Phase I of the visibility protection program," the basic structure of the regulations provided today will remain constant for *all* phases. These regulations function as the basic framework from which this present program can be implemented and into which future phases can be incorporated. In other words, the basic plan requirements will remain consistent while only the elements which define the scope of the program will change in response to advances in our technical knowledge.

The proposed regulations require input into the program by all affected parties. Thus, coordination between the States, the Federal Land Managers, and EPA will be necessary to implement an effective visibility program. The State retains the primary

responsibility of developing a viable visibility program. The Federal Land Manager has the responsibility of protecting the visibility values of Federal class I areas. These two must work together to ensure the visibility values of these areas are protected. EPA's responsibility is to (1) promulgate visibility regulations which would require States to revise their State Implementation Plans (SIPs), and (2) contiune [*sic*] research into visibility for use in future phases.

The Program—In Detail

We are proposing regulations that require the 36 States containing mandatory class I Federal areas to submit revisions to their SIPs within 9 months. These revisions will (1) require certain existing major stationary sources to install the Best Available Retrofit Technology (BART) for controlling those pollutants which cause visibility impairment, (2) identify and evaluate long-term strategies for making reasonable progress toward remedying existing and preventing future impairment in the mandatory class I Federal Areas, and (3) require the adoption of certain measures that will supplement the States' new source review program regarding visibility impacts. These requirements are summarized below.

A. BART Requirements

1. *The Federal Land Managers and the States will begin early consultation with each other.* We expect these two groups to work closely with each other throughout the process of developing all aspects of the SIP revision. Because the Clean Air Act charges the Federal Land Managers with protecting air quality related values, including visibility, the State must adequately consider comments from the Federal Land Managers.

2. *The Federal Land Manager or the State identifies whether, within any mandatory class I Federal area, there exists any impairment of visibility.* This impairment must be identified within 90 days of promulgation of these regulations. We are defining "impairment" as any "humanly perceptible change in visibility (visual range, contrast, coloration) from that which would have existed under natural conditions."

3. *Federal Land Managers or the State will identify the integral vistas (if any) for each mandatory class I Federal area.* These regulations would permit the Federal Land Managers to identify integral vistas. An integral vista is a view from within the area of a scenic landmark that is located outside the boundary of the area.

4. *The State, in consultation with the Federal Land Managers, will identify the existing major stationary sources which cause the visibility impairment.* The regulation provides a specific definition for existing major stationary sources. During Phase I of the visibility program, the State and the Federal Land Manager must be able to "reasonably attribute" the visibility impairment in the mandatory class I Federal area to a major stationary source through visual observation or other monitoring technique. During later phases of the program, the Agency will likely require the State and Federal Land Managers to place more emphasis on the use of modeling in identifying pollution sources.

5. *The State, in consultation with the Federal Land Manager, will perform a BART analysis on existing major stationary sources identified as impairing visibility.* The BART analysis does not apply to any source which was in operation before August 7, 1962. In the BART analysis, the State determines what additional air pollution control technologies need to be required in order to reduce existing visibility impairment.

In conducting this analysis, the State first identifies those control techniques that could improve visibility. If techniques exist then the State proceeds with the BART analysis, but if no technique exists, then the State stops the analysis at this point. For example, while methods might exist for the partial control of a pollutant the reductions achievable may not be sufficient to achieve any improvement in visibility.

In such a case the State would not be obligated to require controls. If control techniques do exist that would improve visibility, the State begins studying alternative control strategies. The State should consider, on a case-by-case basis, how much various alternative control techniques would cost, the energy and

environmental impact of the controls, what air pollution technologies the source already has in place, the remaining useful life of the source, and to what degree the control alternatives would improve visibility. In order to assist States in the analysis of BART, the Agency has developed a guideline. For large power plants, BART must be determined pursuant to this guideline. The BART guideline proposed today is necessarily general. The Agency is considering supplementing this guideline in the near future, particularly with regard to specific large fossil-fuel fired power plants or categories of such power plants.

The last stage of the BART analysis is for the State to specify an emission limitation that reflects BART. The source must then install, operate, and maintain the control technology to meet the emission limitation.

6. *The source may apply to the Administrator for an exemption from BART on the basis that the source does not cause or contribute to significant impairment of visibility.* The source must notify the Federal Land Manager of its application and must receive written concurrence from the State on the application. To receive an exemption, the source must demonstrate to the Administrator that it does not cause or contribute to significant impairment of visibility.

By significant impairment we mean the level of impairment that interferes with the intended use of the area. When applying for an exemption, a source should address the frequency, extent, time of occurrence, intensity and duration of the impairment. if the Administrator grants an exemption, the Federal Land Manager must concur before the exemption will become effective.

B. Monitoring of Visibility Impacts.

1. *The State will develop a monitoring strategy.* This strategy would assess the State's need for visibility monitoring taking into consideration available and forthcoming monitoring techniques and guidelines.

2. *The State will provide for consideration of monitoring requirements for new sources.* The State should assess the need for monitoring by a source to provide information on any potential

impacts on visibility in the Federal Class I area as part of the new source review process.

3. *The State will evaluate any available monitoring data.* Any existing monitoring data available to the State should be incorporated into the State's decision-making process for BART determinations and new source review decisions.

C. Development of the Long-Term Strategy.

The proposal would require each plan to include a long-term (10-15 year) strategy for making reasonable progress toward remedying existing and preventing future visibility impairment. The requirements are summarized below.

Remedying Existing Impairment

1. *The State must consider any land management plans to protect or enhance visibility in the mandatory class I Federal area.* This will also be useful in developing the part of the long-term strategy relating to prevention of future impairment.

2. *Some of the measures the State must consider are:*

a. *The effectiveness of existing air pollution control programs in reducing visibility impairment.* For example, the attainment/maintenance of National Ambient Air Quality Standards may have a positive effect on reducing or eliminating visibility impairment in mandatory class I Federal areas. If this is the case, the State should explain how this would contribute to reasonable progress.

b. *Additional emission limitations and schedules for compliance for uncontrolled or poorly controlled sources not covered by BART.* This recognizes that States may have to control sources not covered by BART to make reasonable progress toward the national goal.

c. *Retirement of existing sources and replacement with new, well controlled facilities.* Where possible this should be encouraged because this measure may have a positive effect on visibility.

3. *The State must do a reanalysis for each existing major stationary source which contributes to visibility impairment in a mandatory class I Federal area.* This reanalysis would occur when

the Administrator determines new technology is available which would more effectively control a pollutant which causes visibility impairment. All pollutants would be analyzed for their contribution to the visibility impairment regardless of previous BART requirements. Where control representing BART has not been previously required for a pollutant reanalyzed, the State shall require the imposition of such control as indicated by this reanalysis.

Preventing Future Impairment

The States must review all major emitting facilities and major modifications as defined in EPA's Prevention of Significant (PSD) regulations for their anticipated impacts on visibility in mandatory class I Federal areas.

The prevention of future visibility impairment was a major concern of Congress. It is addressed not only in Section 169A, which deals exclusively with visibility, but also in Sections 1060-169 on PSD. We have already promulgated regulations meeting the visibility requirements of the PSD Sections. In these PSD regulations, the owner or operator of new major emitting facilities or major modifications of a major emitting facility must assess whether they would impair visibility. Thus, a State's compliance with the PSD program would go a long way toward preventing future visibility impairment in mandatory class I Federal areas.

There is, however, a gap in the PSD regulations in that they do not call for the review of a major emitting facility or major modification locating in a "non-attainment" area, even if it would impair visibility in a mandatory class I Federal area. Today's proposal would remedy this with regard to visibility impacts by covering all such sources irrespective of their location.

D. *Review of the Long-term Strategy.*

The State will review its strategy in consultation with the Federal Land Manager and report its findings to the public and the Administrator at least every three years. We believe that the periodic review of the long-term strategy is an important part of assessing reasonable progress toward the national visibility goal.

Because the visibility program is new and evolving, it is necessary to 1) take into account advances in technology, 2) evaluate progress toward the goal, 3) evaluate specific program effectiveness and 4) provide a reassessment of the reasonableness of measures incorporated into the long-term strategy. In this review of the long-term strategy the regulations would require certain analyses, including: an assessment of the progress achieved in remedying existing impairment, an evaluation of the change in visibility, an assessment of the strategy's long-term ability to prevent future impairment, and identification of additional measures that may be necessary to make reasonable progress toward the national goal.

E. *New Source Review Requirements for Visibility Impacts.*

EPA's PSD regulations require that a proposed major emitting facility or major modification evaluate its potential impact on visibility and, if the source would cause an adverse impact on visibility in a Federal class I area that the State deny the permit.

Commenters on the Advance Notice of Proposed Rulemaking noted that the States need additional guidance for new source review. We are therefore proposing a definition of "adverse impact" and clarifying certain procedural relationships between the Federal Land Manager and the State in the review of new source impacts on visibility in Federal class I areas. Section 51.307 of the visibility regulations specifies requirements the States must meet during the new source review process.

As the first step in the review process the State notifies the Federal Land Manager of any potential new source that may impact visibility in a Federal class I area. The State and Federal Land Managers then begin consulting with each other, which consultation will continue throughout the permitting process. Where the PSD class I increments are not violated, the Federal Land Manager may demonstrate that the source will have an adverse impact on visibility in the Federal class I area. The manager provides this demonstration to the State which then either grants or denies the permit application. If the State agrees with the Federal Land Manager's assessment that the source will adversely impact

visibility, then the State will deny the permit. If the State disagrees with the Federal Land Manager's demonstration then it will provide the Federal Land Manager with a written explanation of its findings. The State may also require the source to monitor visibility at the proposed site as part of the PSD permit application.

F. *Conclusion*

The immediate, principal benefit of these regulations will be (1) the reduction or elimination of impacts reasonably attributable to specific existing sources, and (2) clarification of procedures for the review of new sources. The focus of these regulations will be principally in the West since western areas have generally good visibility now and are extremely sensitive to degradation of their visibility. Also, the majority of the mandatory class I Federal areas are located in the western United States.

The phased approach of these regulations will limit the amount of resources the States will have to expend on revising their SIPs. Preliminary indications are that a limited number of existing major stationary sources in a few States will have to retrofit controls. The one major requirement applicable to all 36 States would be the development of a long-term strategy, which includes a review of all new sources impacting visibility, for making reasonable progress toward the national visibility goal. EPA believes, however, that some of the basic elements of an acceptable strategy already exist within the framework of other air pollution programs. Therefore, the State will need to examine the feasibility and efficacy of only a few other measures to determine if they should or need to be included in the long-term strategy.

It should be noted, however, that although these regulations require a new source review program, *all* States must review new sources in accordance with PSD regulations. The visibility regulations *neither subsume* nor eliminate the State responsibility under the PSD program.

The other requirements of these proposed regulations are primarily procedural in nature and while they must be addressed, we

believe that the regulations provide sufficient guidance to preclude the expenditure of vast State resources for compliance.

IV. REGULATORY IMPACT

The Agency has prepared a draft regulatory impact analysis for review in concert with these proposed rules. This document is included in Docket No. A-79-40 and may be obtained by writing Control Programs Development Division (MD-15). U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711.

V. SOLICITATION OF COMMENTS

The Agency actively solicits comments on all aspects of the proposed regulations and guidelines.

These proposed rules are issued under the authority granted in Sections 110, 114, 160-169, 169A, and 301 of the Clean Air Act, 42 U.S.C. 7410, 7414, 7470-7479, 7491, and 7601.

Dated: May 15, 1980.

Douglas Costle,

Administrator.

It is proposed to add a new Subpart P to Part 51, Title 40 of the Code of Federal Regulations to read as follows:

Subpart P—Protection of Visibility

Sec.

51.300 Purpose and applicability.
51.301 Definitions. -
51.302 Implementation control strategies.
51.303 Exemptions from control.
51.304 Identification of integral vistas.
51.305 Monitoring.
51.306 Long-term strategy.
51.307 New Source review.

Authority: 42 U.S.C. 7210, 7414, 7470-7479, 7491, 7601.

Subpart P—Protection of Visibility

§ 51.300 Purpose and applicability

(a) *Purpose.* The primary purpose of this Subpart is (1) to require States to develop programs to assure reasonable progress toward meeting the national goal of preventing any future, and remedying any existing, impairment of visibility in mandatory class I Federal areas which impairment results from man-made air pollution, and (2) to establish procedures for new source permit applicants, States, and Federal Land Managers to use in conducting the visibility impact analysis required at 40 CFR 51.24(p) for new sources.

(b) *Applicability.* (1) The provisions of this Subpart are applicable to: (i) each State and has a mandatory class I Federal area identified in 40 CFR Part 81, Subpart D, and (ii) each State in which there is any source the emissions from which may reasonably be anticipate [*sic*] to cause or contribute to any impairment of visibility in any such area, (iii) Section 51.307 is applicable to all States for the purpose of new source review under the Clean Air Act of visibility impacts in Federal class I areas.

(2) The provisions of this Subpart, except as provided for in subparagraph (iii) above, are applicable to the following States unless the Administrator later determines that the provisions of subparagraph (1) above are not met. Applicability of the provisions of this Subpart to other States shall become effective only upon the determination of the Administrator that either of the provisions in subparagraph (1) above apply.

(i)Alabama
(ii)Alaska
(iii)Arizona
(iv)Arkansas
(v)California
(vi)Colorado
(vii)Florida
(viii)Georgia
(ix)Hawaii
(x)Idaho

(xi)Kentucky
(xii)Louisiana
(xiii)Maine
(xiv)Michigan
(xv)Minnesota
(xvi)Missouri
(xvii)Montana
(xviii)Nevada
(xix)New Hampshire
(xx)New Jersey
(xxi)New Mexico
(xxii)North Carolina
(xxiii)North Dakota
(xxiv)Oklahoma
(xxv)Oregon
(xxvi)South Carolina
(xxvii)South Dakota
(xxviii)Tennessee
(xxix)Texas
(xxx)Utah
(xxxi)Vermont
(xxxii)Virginia
(xxxiii)Virgin Islands
(xxxiv)Washington
(xxxv)West Virginia
(xxxvi)Wyoming

§ 51.301 Definitions.

As used in this Subpart, all terms shall have the meaning provided for in the Clean Air Act except as defined herein.

(a) "Existing Major Stationary Source" means any of the following stationary sources of air pollutants which was not in operation prior to August 7, 1962, or reconstructed after that date,

and was in existence on August 7, 1977 and has the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act:

(1) fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input,

(2) coal cleaning plants (thermal dryers),

(3) kraft pulp mills,

(4) Portland cement plants,

(5) primary zinc smelters,

(6) iron and steel mill plants,

(7) primary aluminum ore reduction plants,

(8) primary copper smelters,

(9) municipal incinerators capable of charging more than 250 tons of refuse per day,

(10) hydrofluoric, sulfuric, and nitric acid plants,

(11) petroleum refineries,

(12) lime plants,

(13) phosphate rock processing plants,

(14) coke oven batteries,

(15) sulfur recovery plants,

(16) carbon black plants (furnace process),

(17) primary lead smelters,

(18) fuel conversion plants,

(19) sintering [*sic*] plants,

(20) secondary metal production facilities,

(21) chemical process plants,

(22) fossil-fuel boilers of more than 250 million British thermal units per hour heat input,

(23) petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels,

(24) taconite ore processing facilities,

(25) glass fiber processing plants, and

(26) charcoal production facilities.

(b) "Potential to emit" means the capability at maximum design capacity to emit a pollutant after the application of air pollution control equipment. Annual potential shall be based on the maximum annual rated capacity of the stationary source assuming continuous year round operation. Enforceable permit conditions on the type of materials combusted or processed may be used in determining the annual potential. Fugitive emissions count, to the extent quantifiable, for each existing major stationary source in determining the annual potential. Secondary emissions are specifically excluded from the determination of annual potential.

(c) "Fugitive Emissions" means those emissions which do not pass through a stack, chimney, vent, or other functionally equivalent opening.

(d) "Secondary emissions" means emissions which occur or would occur as a result of the construction or operation of an existing major stationary source but do not come from the existing major stationary source.

(e) "Stationary Source" means any building, structure, facility, or installation which emits or may emit any air pollutant regulated under the Clean Air Act.

(f) "Building, structure, facility, or installation" means any grouping of pollutant emitting activities which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or persons under common control).

(g) "Best Available Retrofit Technology (BART)" means an emission limitation (including a visible emission standard) based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing major stationary source. The emission limitation shall be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair [*sic*] quality environmental

impacts of compliance, any existing pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

(h) "Reconstruction" will be presumed to have taken place where the fixed capital cost of the new component(s) exceeds 50 percent of the fixed capital cost of a comparable entirely new source. However, any final decision as to whether reconstruction has occurred shall be made in accordance with the provisions of 40 CFR 60.15(f)(1-3). A reconstructed source will be treated as a new major stationary source for purposes of this Subpart, except that use of an alternative fuel or raw material by reason of an order in effect under Section 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act, shall not be considered reconstruction.

(i) "Fixed capital cost" means the capital needed to provide all of the depreciable components.

(j) "Visibility impairment" means any humanly perceptible change in visibility (visual range, contrast, coloration) from that which would have existed under natural conditions.

(k) "Natural Conditions" means the visibility which would be expected to occur in the absence of man-made air pollution.

(l) "Significant impairment" means for purposes of Section 51.303 visibility impairment which, in the judgment of the Administrator, interferes with the management, protection, preservation, or enjoyment of the mandatory class I Federal area, including interference with and impairment of the visitor's visual experience. This determination shall be made on a case-by-case basis taking into account the extent, intensity, and duration of the impairment, frequency and time of occurrence of the impairment, the correlation between times of visitors use and access to the mandatory class I Federal area and the frequency of occurrence and timing of natural conditions.

(m) "Integral vista" means the perception from within the Federal class I area of a specific historical, cultural, or scenic landmark or panorama which is located outside the boundary of a Federal class I area, which vista is important to the vistor [*sic*] experience of the area or the fundamental purpose for which the area was established and preserved.

(n) "In operation" means engaged in activity related to the primary design function of the source.

(o) "Reasonably attributable" means attributable by means of visual observation or other monitoring technique.

(p) "In existence" means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations and either has (i) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (ii) entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in a reasonable time.

(q) "Major emitting facility" and "major modification" means "major stationary source" and "major modification" as defined in 40 CFR 51.24.

(r) "Adverse impact" means for purposes of § 51.307 visibility impairment which interferes with the management, protection, preservation, or enjoyment of the Federal class I area, including interference with and impairment of the visitor's visual experience. This determination shall be made on a case-by-case basis taking into account the extent, intensity and duration of visibility impairment, the frequency and time of occurrence of the impairment, the correlation between time of visitors use and access to the Federal class I area, and the frequency of occurrence and timing of natural conditions.

(s) "Federal Land Manager" means the secretary of the department with authority over any Federal class I area. the

Chairman of the Roosevelt-Campobello International Park Commission, or their designated agents.

(t) "Agency" means the U.S. Environmental Protection Agency.

§ 51.302 Implementation control strategies.

(a) *Plan Revision Procedures.* (1) Each State identified in § 51.300(b)(2) shall submit, no later than nine months from the date of promulgation of this regulation, an implementation plan revision for the purposes of meeting the requirements of this Subpart.

(2)(i) The State, prior to adoption of any implementation plan required by this Subpart, shall conduct one or more public hearings on such plan.

(ii) Any hearing required by this Subpart shall be held only after reasonable notice, which shall include at least thirty days prior to the date of such hearing(s):

(A) Notice given to the public by prominent advertisement in the region affected announcing the data(s) [*sic*], time(s), and place(s) of such hearing(s);

(B) Availability of each proposed plan and all supporting documentation in at least one location in each region to which it will apply, and the availability of each compliance schedule for public inspection in at least one location in the region in which the affected source is located;

(C) Written notification to the Administrator (through the appropriate Regional Office);

(D) Written notification to each local air pollution control agency in each region to which the plan will apply;

(E) Written notification to each affected Federal Land Manager;

(F) In the case of interstate impacts, written notification to any other States which may be affected as a result of such plan; and

(G) A summary prepared by the Federal Land Manager of the conclusions and recommendations, if any, on the proposed plan.

(3) Submission of plans as required by this Subpart shall be conducted in accordance with the procedures in 40 CFR 51.5.

(4) The State shall include, as part of the information available to the public prior to public hearing(s) on such proposed plan, evidence of consultation with all affected Federal Land Managers and their conclusions and recommendations, if any, on the proposed plan.

(5) The Administrator, prior to proposed approval or disapproval of a plan submitted under this Subpart, shall consult with all appropriate Federal Land Managers.

(b) *State and Federal Land Manager Coordination.* (1) The State shall identify, to the Director of the National Park Service, the Director of the Fish and Wildlife Service, the Chief of the Forest Service and/or the Chairman of the Roosevelt-Campobello International Park Commission, as appropriate, in writing and within 30 days of the date of promulgation of these regulations, the title of the official to which the Federal Land Manager of any area listed in 40 CFR Part 81, Subpart D shall:

(i) Submit the list of integral vistas that are to be afforded visibility protection for the purpose of implementing Section 51.304, and

(ii) Identify visibility impairment for the purpose of implementing subparagraph (4)(ii) below.

(2) The State, at least 60 days prior to holding public hearings on the plan, shall consult in person with the affected Federal Land Manager on all aspects of the proposed plan revision for the purpose of meeting the requirements of this Subpart.

(3) The plan shall provide procedures for continuing consultation between the State and Federal Land Manager on the implementation of the visiability [*sic*] protection program required by this Subpart.

(c) *General Plan Requirements.* (1) The plan shall contain:

(i) A long-term (10-15 years) strategy, including such emission limitations, schedule of compliance, and other such measures, as may be necessary to make reasonable progress toward the national goal specified in § 51.300(a) in the manner specified in § 51.306.

(ii) An assessment prepared after consultation with the Federal Land Manager and including such comments as provided by the Federal Land Manager, of the impairment of visibility in each mandatory class I Federal area and a discussion of how each element of the plan addresses the impairment.

(2)(i) Any integral vista identified under § 51.304(b) shall be protected under the requirements of this Subpart to the same extent as any mandatory class I Federal area identified in 40 CFR Part 81, Subpart D. The plan shall identify all mandatory class I Federal areas, including all integral vistas to be protected.

(ii) The plan shall provide for the protection of additional integral vistas identified in accordance with § 51.304(c) at the earliest opportunity, but in no case less frequent than the time of the periodic review of the long-term strategy required by § 51.306(c).

(iii) The plan shall provide for the protection of integral vistas identified in accordance with § 51.304(b) or (c) or (d) for purposes of review of new major emitting facilities and major modifications as provided for in § 51.306(d).

(iv) The State need not provide visibility protection of a vista identified as integral by the Federal Land Manager, if it demonstrates to the satisfaction of the Administrator, that such an integral vista has not been identified in accordance with "Criteria for the Identification of Integral Vistas."

(3) The plan shall require such source to maintain control equipment required by this Subpart and establish procedures to ensure such control equipment is properly operated and maintained.

(4) *Determination of BART.* (i) The plan shall include emission limitations representing BART for each existing major stationary source identified according to the procedures in subparagraph (ii) below.

(ii) The State, in consultation with the appropriate Federal Land Manager, shall analyze for BART each existing major stationary source which may reasonably be anticipated to cause or contribute to visibility impairment in any area identified in 40 CFR Part 81,

Subpart D, which impairment is identified by the State, or by the appropriate Federal Land Manager within 90 days of promulgation of these regulations. The Federal Land Manager may recommend to the State for BART analysis existing major stationary sources suspected of causing or contributing to visibility impairment in the mandatory class I Federal area. The State, in determining whether the identified impairment is reasonably attributable to an existing major stationary source, shall consult with and take into account the recommendations of the affected Federal Land Manager and the appropriate EPA Regional Administrator, or his designated representative, and shall provide, in writing and at least 30 days prior to any public hearing on the plan, all supporting documentation on any existing major stationary source not analyzed for BART as recommended by the affected Federal Land Manager or appropriate EPA Regional Administrator.

(iii) If the State determines that technological or economic limitations on the applicability of measurement methodology to a particular existing major stationary source would make the imposition of an emission standard infeasible it may, in consultation with the Federal Land Manager, instead prescribe a design, equipment, work practice, or other operational standard, or combination thereof, to require the application of BART. Such standard, to the degree possible, is to set forth the emission reduction to be achieved by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

(iv) Emission limitations set under this paragraph for fossil-fuel fired generating plants have a total generating capacity in excess of 750 megawatts shall be determined due to "Proposed Guidelines for Determining Best Available Retrofit Technology for Coal-fired Power Plants and Other Major Stationary Sources."

(v) The plan shall require that each existing major stationary source required to install and operate BART do so as expeditiously as practicable but in no case later than five years after plan approval.

(vi) The plan shall require that each existing major stationary source required to install and operate BART install continuous emission monitoring, as applicable, in accordance with 40 CFR Part 51, Appendix P.

§ 51.303 Exemptions from control.

(a)(1) Any existing major stationary source required by action under § 51.302 to install, operate, and maintain BART may apply to the Administrator for an exemption from that requirement.

(2) An application under this Section shall include all available documentation relevant to the impact of the source's emissions on visibility for any area listed in 40 CFR Part 81, Subpart D, and a demonstration by the existing major stationary source that it does not or will not by itself or in combination with other sources emit any air pollutant which may be reasonably anticipated to cause or contribute to any significant impairment of visibility in any mandatory class I Federal area identified in 40 CFR Part 81, Subpart D.

(b) Fossil-fueled fired power plants with a total generating capacity of 750 megawatts or more may receive an exemption from BART only after demonstration to the satisfaction of the Administrator that such source is located at such a distance from all areas listed in 40 CFR Part 81, Subpart D that such power plant does not or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to significant impairment of visibility in any such area.

(c) Application under this Section must be accompanied by written concurrences form all affected States.

(d) The existing major stationary source shall provide for prior written notice to all affected Federal Land Managers of any application for exemption under this Section.

(e) The Federal Land Manager may provide an initial recommendation on the disposition of such application. Such recommendation, where provided, shall be part of the exemption

application. This recommendation shall not be construed as the concurrence required under subparagraph (h) below.

(f) The Administrator, within 90 days of receipt of an application for exemption from control, shall provide notice and opportunity for public hearing on the application.

(g) After notice and opportunity for public hearing, the Administrator may grant or deny the exemption. For purposes of judicial review, final EPA action on an application for an exemption under this Section shall not occur until EPA approves or disapproves the State Implementation Plan revision.

(h) An exemption granted by the Administrator under this Section shall be effective only upon concurrence by the appropriate Federal Land Manager with the Administrator's determination.

§ 51.304 Identification of integral vistas.

(a) The Federal Land Manager may, in accordance with "Criteria for the Identification of Integral Vistas", identify to the State integral vistas to be afforded visibility protection.

(b) Integral vistas identified within 90 days from the date of promulgation of these regulations shall be subject to § 51.302(c)(2)(i).

(c) Integral vistas identified more than 90 days from the date of promulgation of the regulations shall be subject to § 51.302(c)(2)(ii).

(d) Integral vistas identified prior to the calendar year in which a complete new source permit application is filed shall be subject to § 51.302(c)(2)(iii).

(e) The State may identify such additional integral vistas, within its boundaries, as it deems necessary and appropriate.

(f) The provision for identification of integral vistas for mandatory class I Federal areas under paragraphs (c) and (d) above shall not be effective after December 31, 1985.

§ 51.305 Monitoring

(a) The State, in consultation with the Federal Land Manager, shall include in the plan a strategy for evaluating visibility in the mandatory class I Federal areas by visual observation or other monitoring techniques. Such strategy shall take into account current and anticipated visibility monitoring research and the availability of appropriate techniques for monitoring visibility and such guidance as is provided by the Agency.

(b) The plan shall provide for the consideration of available visibility data and shall provide a mechanism for its use in BART analyses, new source permit decisions, and other actions under the plan.

§ 51.306 Long-term strategy.

(a)(1) Each plan shall include a long-term (10-15 years) strategy for making reasonable progress toward the national goal specified in Section 51.300(a).

(2) A long-term strategy shall be identified for each area listed in 40 CFR Part 81, Subpart D.

(3) The plan shall set forth with reasonable specificity why the long-term strategy is adequate for making reasonable progress toward the national goal.

(b) The State, in developing a long-term strategy shall consider any plans and goals provided by the Federal Land Manager for the protection and enhancement of visibility in the mandatory class I Federal area.

(c)(1) The plan shall provide for periodic review and revision, as appropriate, of the long-term strategy not less than every three years. This review shall include consultation with the appropriate Federal Land Manager and a report to the public and the Administrator on progress toward the national goal.

(2) This report shall include:

(i) An assessment, prepared after consultation with the Federal Land Manager and including any evaluations as provided by the

Federal Land Manager under § 51.302(c)(4)(ii) of the progress achieved in remedying existing impairment;

(ii) An evaluation, prepared after consultation with the Federal Land Manager and including any evaluations provided by the Federal Land Manager, of any change in visibility since the last such report, or, in the case of the first report, since plan approval;

(iii) A reassessment of the ability of the long-term strategy to prevent future impairment of the mandatory class I Federal areas;

(iv) An identification of additional measures, including the need for SIP revisions, that may be necessary to assure reasonable progress toward the national goal;

(v) An assessment of the progress achieved in implementing BART and meeting other schedules set forth in the long-term strategy; and

(vi) An assessment of the impact of an exemption granted under Section 51.303.

(d)(1) The long-term strategy shall provide for review of the impacts on visibility for any area listed in 40 CFR Part 81, Subpart D of all new major emitting facilities and major modifications.

(2) This review of new major emitting facilities and major modifications shall be in accordance with such guidance as is provided by the Agency.

(e) The long-term strategy shall include a review of the impacts on visibility of all pollutants regulated under the Clean Air Act at such times, as determined by the Administrator, as new technology becomes reasonably available for the control of the pollutant for each existing major stationary source causing or contributing to impairment in any mandatory class I Federal area which impact is reasonably attributable to that source. Where control representing BART has not been previously required for a pollutant reanalyzed at the source, the plan shall require the imposition of such control as indicated by this reanalysis.

(f) The State in developing the long-term strategy shall consider, at a minimum, the following measures for incorporation into the long-term strategy:

(1) Emission reductions due to ongoing air pollution control programs,

(2) Additional emission limitations and schedules for compliance,

(3) Mitigation of impacts of construction activities,

(4) Source retirement and replacement schedules,

(5) Smoke management techniques for agricultural and forestry management purposes, and

(6) Enforceability of emission limitations and control measures.

(g) The plan shall discuss the reasons why the above and other reasonable measures considered in the development of the long-term strategy were or were not adopted as part of the long-term strategy.

(h) The plan shall include schedules for the implementation of the elements of the long-term strategy.

(i) The long-term strategy shall take into account the effect of new sources; and, for existing sources, the costs of compliance, the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, the remaining useful life of any affected existing source and equipment therein, and the degree of improvement in visibility anticipated to result from control.

§ 51.307 New Source Review.

(a) For purposes of new source review under the Clean Air Act, the State plan shall provide for written notification of all appropriate Federal Land Managers of any proposed new major emitting facility or major modification that may affect visibility in any Federal class I area. Such notification shall be made in writing and within 30 days of receipt of and at least 30 days prior to public hearing by the State on the application for permit to construct. Such notification shall include an analysis of the anticipated impacts on visibility on the Federal class I area.

(b) The plan shall provide for consideration of any demonstration by a Federal Land Manager, provided within 30 days of the notification required by paragraph (a) above, that such proposed major emitting facility or major modification will have an adverse impact on visibility in any Federal class I area, including any integral vista identified in accordance with paragraph (h) below. Where the State finds that such a demonstration does not adequately support a determination by the State that an adverse impact will result, the State shall provide the Federal Land Manager with such analyses and discussion as supports the State's findings. This must be submitted to the Federal Land Manager in writing and at least 30 days prior to any public hearing on such application or, if there is no public hearing, 30 days prior to issuance of the permit.

(c) Where the State, in consultation with the Federal Land Manager, determines that an adverse impact on visibility in any Federal class I area will result from a new major emitting facility or major modification, the State shall not issue the permit.

(d) The State plan shall provide for the opportunity for review, by the public, of any new major emitting facility or major modification that may have an impact on visibility in any Federal class I area.

(e) The plan shall provide for consultation by the State with the appropriate Federal Land Manager on any application for a new source review permit submitted by any major emitting facility or major modification that may affect visibility in any Federal class I area.

(f) The State may, after considering the recommendation of the appropriate Federal Land Manager, require monitoring of visibility in the Federal class I area near the proposed new major emitting facility or major modification for such purposes and by such means as the State deems necessary and appropriate.

(g) The plan shall provide for an opportunity for consultation, prior to issuance of any new source review permit, with the Agency where a dispute between the Federal Land Manager and the State exists on the issuance of such permit.

(h) The plan shall provide for the protection of integral vistas for Federal class I areas identified in accordance with "Criteria for the Identification of Integral Vistas" as follow:

(1) For Federal class I areas so designated as of the date of promulgation of these regulations.

(i) Integral vistas identified prior to the calendar year in which a complete new source permit application is filed, and

(ii) Identified prior to December 31, 1985.

(2) For Federal class I areas designated after the date of promulgation of these regulations, as identified at the time of reclassification of such area to class I.

(3) The State need not provide visibility protection of a vista identified as integral by the Federal Land Manager, if it determines that such integral vista has not been identified in accordance with "Criteria for the Identification of Integral Vistas."

Supplemental Statement of Basis and Purpose[1]

The following discussion supplements various aspects of the basis and purpose for EPA's proposed regulations on visibility protection.

1. *The phased approach*—Congress required that EPA promulgate regulations to (a) assure reasonable progress toward meeting the national visibility goal set out in Section 169A(a)(1), (b) require BART analyses for existing major stationary sources, and (c) require development of a long-term strategy [Section 169A(a)(4), (b)(2)]. Congress, however, did not address the problem of visibility protection from a scientific perspective since, at the time of the Clean Air Act Amendments of 1977, there was scant technical and virtually no regulatory experience with the protection of visibility. Recognizing this, Congress left the appropriate techniques and methods for implementing the visibility protection program of Section 169A and, indeed, the precise definition of the

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[1] Note: This statement will not appear in the Code of Federal Regulations.

problem to be addressed to EPA's study and regulations [Section 169A(a)(2), (a)(3), and (b)(1)]. EPA's subsequent study of visibility impairment revealed that man-made visibility impairment manifests itself in various forms. Some of these forms can be attributed to specific sources. EPA has determined, however, that there exist at present limitations in source/impairment relationships which make it impossible in many cases, particularly for multi-source impacts, to predict confidently that a given amount of control will yield a specific degree of improvement in visibility. EPA is thus proposing, as anticipated by the Advanced Notice of Proposed Rulemaking (ANPR), a "phased approach" to these regulations.

This phased approach will permit State control agencies to focus initially on the most clearly defined cases of existing impairment and on strategies to prevent future impairment, while allowing evolution of additional guidelines and control strategies as scientific understanding of source/impairment relationships improves. EPA received support for this approach in comments from representatives of both environmental and industrial groups.

Even though the Agency has referred to the proposed rules as Phase I the basic structure of the regulations provided today will remain consistent for all phases. These regulations function as the basic framework from which this present program can be implemented and future phases can be incorporated. In other words, the basic plan requirements will remain consistent while only the elements which define the scope of Phase I will change in response to advances in technical knowledge.

2. *General definitions*—As explained below several definitions are consistent with the proposed PSD regulations (44 FR 51924). Where modifications are made in the final promulgation, expected shortly, these definitions will be changed accordingly.

A. *"Existing major stationary source"*—Section 169A(g)(7) defines the term "major stationary source"; however, to avoid confusion with the PSD regulations, EPA has defined the term "existing major stationary source" which includes the age limitations specified in Section 169A(b)(2)(A). The proposed definition of

"existing major stationary source" follows the definition in Section 169A(g)(7). It is limited to specific source categories with the potential to emit 250 tons or more per year of any pollutant regulated under the Act. The meaning of Section 169A(g)(7)'s definition of "stationary sources with the potential to emit 250 tons per year of any pollutant" depends on the interpretation of "potential to emit" and "stationary source." Since Congress used similar language in Section 169(1) without indicating a change in meaning, it is appropriate to examine what Congress intended in Section 169(1), in interpreting these terms [H.Rep. No. 95-564, 95th Cong., 1st Sess. 155 (1977)]. In *Alabama Power v. Costle*, 13 ERC 1993, the Court has already examined this and the result of this interpretation is the basis for today's proposed definition of "existing major stationary source" as defined in Section 169A(g)(7). Any change in EPA's proposed interpretation of Section 169(1) for purposes of PSD may affect the definition proposed today for visibility unless legal authority and differing program objectives would support different definitions for each program. Specifically, today's proposal defines "potential to emit" as "the capacity at maximum design capacity to emit a pollutant after the application of air pollution control equipment." This definition parallels that proposed in the PSD regulations on September 5, 1979 (44 FR 51924). "Potential to emit" would be calculated on the assumption that air pollution control equipment incorporated into the design of a source will control emissions in the manner reasonably anticipated when the calculation is made. Therefore, whether a source is an existing major stationary source might depend primarily on what control equipment has been incorporated in its design.

The definition of "potential to emit" also states: "Annual potential shall be based on the maximum annual rated capacity of the stationary source assuming continuous year round operation.

Enforceable permit conditions on the type of materials combusted or processed may be used in determining the annual potential." This is consistent with the *Alabama Power* decision which calls for calculation of a source's "potential to emit" based on

its "full design capacity" [13 ERC at 2003]. However, this calculation could reflect enforceable permit conditions on the amount of materials combused (*sic*) or processed. Also, again consistent with EPA's PSD proposal, "Secondary emissions" would not count in determining a source's potential to emit.

In determining whether a source, as defined in Section 169A(g)(7), has the potential to emit 250 tons per year of a pollutant, EPA proposes to take into account all of the emissions of that pollutant—even fugitive emissions, at least to the extent that they are reasonably quantifiable. EPA believes that there is no reason why a source of a particular pollutant should escape the BART requirement merely because the emissions of the pollutant are fugitive, when a source emitting the same pollutant might have to install BART if the emissions are vented through a stack or other opening. In both cases, the emissions could cause or contribute to visibility impairment.

In *Alabama Power*, the Court said fugitive emissions could not be counted in determining whether a source is major unless EPA issues an appropriate legislative rule [13 ERC at 2017]. Today's proposal, therefore, explicitly states that fugitive emissions shall be included in determining the potential to emit for each of the source categories listed in Section 169A(g)(7). Consistent with the Court's holding, the proposal defines "fugitive emissions" as "those emissions which do not pass through a stack, chimney, vent, or other functionally equivalent opening."

As for "stationary" in *Alabama Power*, the Court said that the definition of "stationary source" in Section 111(a)(3) controls the meaning of that term when used in the PSD part of the statue [13 ERC at 2038].

The proposed regulations would define "building, structure, facility, or installation" as "any grouping of pollutant-emitting activities which is located on one or more contiguous or adjacent properties and which are controlled by the same person (or by persons under common control)." This definition would be important in determining whether additions to, or reconstructions of,

an existing stationary source in operation before August 7, 1962 would be subject to the BART requirement. For example, a fossile-fuel [*sic*] fired steam electric plant (power plant) of more than 250 million Btu an hour heat input may have been "in operation" before August 7, 1962, but also may have added two boilers in 1967. These two boilers would be considered an "existing major stationary source" if individually or together they had the potential to emit 250 tons a year or more of any pollutant, and if they were of more than 250 million Btu heat input since "source" would, in effect, mean *any* grouping of pollutant-emitting activities at one site and under common control. The two boilers would also be an "existing major stationary source" if they were "reconstructed." The proposed definition of "reconstruction" is consistent with that in 40 CFR 60.15, dealing with new source performance standards.

In *Alabama Power*, the Court stated that Congress gave EPA latitude to define the component terms of "stationary source" to reflect the purpose and structure of the program for which the definition is intended [13 ERC at 2040]. The purpose of the visibility regulations is to assure reasonable progress toward the remedying of any existing and preventing of any future impairment of visibility in certain class I areas. Congress structured the program so that the BART requirement would be an important mechanism for achieving one part of that purpose, the remedying of existing visibility impairment. Although the BART analysis itself considers the remaining useful life of the source, cost, and other factors, Congress decided that EPA should not be required by statute to require BART for all sources regardless of age as a minimum condition for SIP approval.

Where a source has had an addition or reconstruction with the potential to emit 250 tons a year of a pollutant between August 7, 1962 and August 7, 1977, EPA believes that the implicit concern of Congress regarding remaining useful life does not apply to the new components at the site and that, therefore, Congress did not intend to "grandfather" such additions or reconstructions. Such a "grandfathering" approach would be without reason and could

seriously undermine progress toward remedying existing visibility impairment. Indeed, preliminary EPA data show that a source cited by Congress in the legislative history of the visibility provisions as causing existing visibility impairment in the Grand Canyon would escape BART review entirely under such a grandfathering approach, even though nearly half its boiler capacity was added since August 7, 1962.

On this basis, EPA believes both the proposed definition of "reconstruction" and "building, structure, facility, or installation" are authorized by the Act and are vital to achieving Congress' purpose.

B. *"In existence" and "in operation"*— The Section 169A requirement for a BART analysis applies only to a major stationary source "in existence" on August 7, 1977 and which, on that date, had not been "in operation" for more than 15 years. EPA has proposed to define "in existence" as meaning "that the owner or operator has obtained all necessary preconstruction or air quality laws or regulations and has either (i) begun or caused to begin, a continuous program of physical on-site construction of the facility or (ii) entered into binding agreements or contractual obligations which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in allowable time." The proposal would define "in operation" as meaning "engaged in activity related to the primary design function of the source." EPA intends a broad interpretation of "primary design function"; thus for example, the production of coke in a steel plant is related to its primary design function, just as is the production of steel.

EPA believes the Act requires that such existing major stationary source that started operation after august 7, 1962 be potentially subject either to the BART requirements or to the PSD requirements as set out in the Clear Air Act Amendments of 1977. EPA specifically solicits comment on whether this interpretation is correct and whether the proposed definition of "in existence" would serve that interpretation.

C. *Reasonably attributable*—The proposed regulations would define "reasonably attributable" to mean attributable by visual observation or other monitoring techniques. This is the mechanism that implements the first phase of the visibility protection program. Thus, if an existing major stationary source emits any air pollutant which can normally be anticipated to cause or contribute to any impairment in an area which impairment can be reasonably attributable to such a source *only* by analytical techniques (i.e., modeling) it will not be subject to a BART analysis in this first phase of the visibility protection program. This definition will likely change in later phases to take advantage of any improvements in understanding of the source/impairment relationship for visibility. EPA specifically solicits comment on this approach to implementing the BART requirement, including whether there are circumstances where current modeling techniques could be employed to indicate that impairment is reasonably attributable to a source.

(3) *Visibility impairment*—EPA is proposing to define "visibility impairment" as any humanly perceptible change in visibility (visual range, contrast, and coloration) from that which would have existed under natural conditions.

The first part of this definition would require that the impairment be humanly perceptible. EPA, in the ANPR, solicited comment on three separate approaches to treating perceptibility as an element of visibility impairment. These were (1) the smallest measurable change in visibility which is detectable by instruments; (2) impairment which is perceptible to humans; and (3) a visually perceptible impairment which is considered significant or adverse. There were no comments received in support of the first approach. Several commenters supported the second approach, which EPA is today proposing, because the ACT intends for visibility protection to be primarily directed at preserving the enjoyment and benefits of good visibility for people.

The restriction to perceptibility, as may be observed by humans, is critical. As noted, varying conditions can affect the perceptibility of a specific impact. Additionally, available instrumentation is more

sensitive to contrast and reduction in visual range than is the human eye. The Agency feels that the interpretation used in these regulations is correct based upon the Congressional concern regarding visibility. The intent of Congress in including Section 169A in the Act was to protect the public's enjoyment of the class I area and, thus, impacts on visibility which cannot be perceived by a human observer should not be considered impairment in the context of the national visibility goal. As discussed below, the proposed regulations charge the appropriate Federal Land Managers with identifying impairment in an area and EPA expects that, in doing so, the Federal Land Managers will keep the public's enjoyment of that area in mind.

Also, several commenters suggested that the third approach to impairment suggested by the ANPR was the most appropriate because, they argued, Congress intended to remedy only that impairment that is considered significant or adverse. EPA believes Congress, in declaring the national goal of "the prevention of *any* future, and the remedying of *any* existing impairment of visibility" (emphasis added), clearly did not intend that the visibility protection program be directed at only those impacts considered significant or adverse. If this had been the intent, Congress clearly could have stated the national goal as the prevention of *significant* future impairment and the remedying of *significant* existing impairment. This it did not do. In the provisions of Section 169A which provide guidance on the nature of the regulations EPA should promulgate, the concept of "significant impairment" is mentioned only in connection with an exemption from BART [Section 169A(c)]. Clearly, it would be nonsensical for Congress to provide an exemption based on a lack of significant visibility impairment if, by definition, visibility impairment could not be other than "significant."

The second part of the proposed definition includes "contrast," as well as "visual range" and "coloration" as expressions of visibility impairment. EPA believes virtually all manifestations of visibility impairment can be expressed by one of these terms.

Contrast, as discussed in the Report to Congress, is generally a much more easily understood indicator of visibility impairment and is mathematically interrelated to visual range. One can often perceive and express contrast changes in visibility more easily than changes in visual range or coloration.

Preliminary studies (see *Protecting Visibility: An EPA Report to Congress*) indicate that a contrast change in the range of 0.02 to 0.05 is capable of being perceived by a human observer. The variation expressed is a result of variability in observer sensitivity and spacing of contrasting objects. Additionally, reductions in visual range as small as 5% may be perceptible to the human observer. Where the impairment is in the form of a coherent plume, the above values will not necessarily be limiting. In this case, other factors, such as a substantial difference in color between the sky and plume, may heighten the viewer's ability to perceive the contrast change. Current efforts to describe visibility impairment in terms of coloration are promising but are, as yet, incomplete. While strict values for contrast and visual range reduction have not been and may never be established, the vicinity of the lower bounds on perceptibility can be estimated. The final determination is, however, related directly to whether the effect could be observed by man. It is important to note that the Agency is continuing to evaluate visibility data and that data obtained from studies conducted in 1979 indicate a range of 0.01 to 0.04 contrast change may be perceptible. Additional studies are being conducted in 1980 to confirm past research.

One commenter on the ANPR argued that Section 169A(g)(6), which says "the terms 'visibility impairment' and 'impairment of visibility' shall include reduction in visual range and atmospheric discoloration," cannot be expanded to include "contrast." This argument contradicts the plain meaning of the statutory language. The use of the words "shall include"in Section 169A(g)(6), clearly indicates that EPA must treat "visibility impairment" as including "reduction in visual range and atmospheric discoloration." Just as clear, however, is Congress' intent that Section 169A(g)(6) be

inclusive, not restrictive. Congress was explicit when it intended the statutory definition to be restrictive, as shown by the definitions in Section 169A(g)(3), (4), (5), and (7).

That Congress gave EPA discretion to clarify the meaning of visibility impairment is also supported by Section 169A(a)(3)(A). That section requires EPA to study and report to Congress "on available methods for implementing the national goal." That report must include recommendations for:

"[A] methods for identifying, characterizing, determining, quantifying, and measuring visibility impairment in [mandatory Federal class I areas]."

This language unmistakably indicates Congress' intent that EPA has discretion on how broadly "visibility impairment" should be defined to effectuate the national goal. This discretion was not solely for purposes of the Report to Congress. Section 169A(b)(1) says the visibility regulations shall "tak[e] into account the recommendations" in the Report to Congress. EPA's careful study of the visibility problem, including that contained in the Report to Congress, supports the definition of "visibility impairment" proposed today and, therefore, it is authorized.

Finally, the definition of impairment restricts impairment to that resulting from human activities, i.e., impairment which would not have existed under natural conditions. While visibility may be degraded as a result of natural causes, Congress clearly limited the scope of the national visibility goal by including only "impairment [which] results from manmade air pollution." Although the determination of natural conditions would be difficult and is to some extent dependent on the monitoring research being done, as discussed elsewhere in this notice, EPA believes such a determination will not be critical to some aspects of the first phase of the program. If impairment can, by visual means, be reasonably attributed to a source, the determination of whether the impairment is man-made involves no precise measurement of natural conditions.

The remedying of existing impairment will require the control of certain existing sources and, therefore, in some circumstances it

may be appropriate to evaluate the potential improvements in visibility against existing conditions. However, as we approach the national goal the impact of new sources will become more perceptible and since new sources are expected to last longer than existing sources their impacts should be evaluated against natural conditions which would exist in the absence of man-made impairment. It will therefore be important to attempt to provide some assessment of natural and existing conditions. Although such an assessment will be difficult, one method of achieving this would be through an analysis of available information to determine the best visibility that currently exists in an area. In making this assessment the State should recognize that frequently visibility is dependent upon seasonal factors. As such, available information should be subdivided into seasonal patterns. The seasonable best visibility would then be chosen on the basis of seasonal variations in naturally occurring phenomena which would then represent natural conditions. Of course one valuable method for obtaining data is through visibility monitoring. Although the Agency is currently evaluating monitoring techniques, these proposed rules would require the State to develop a monitoring strategy which would include a strategy for assessing natural conditions and provide for the reevaluation of natural conditions, based upon new data for the purpose of assessing new source impacts on visibility.

(4) *Significant impairment*—The proposed regulations define significant impairment as "visibility impairment which, in the judgment of the Administrator, interferes with the management, protection, preservation, or enjoyment of the mandatory class I Federal area, including interference with and impairment of the visitor's visual experience. This determination shall be made on a case-by-case basis taking into account the extent, intensity, and duration of the impairment frequency and time of occurrence of the impairment frequency and time of occurrence of the impairment, the correlation between times of visitor use and access to the mandatory class I Federal area and the frequency of occurrence and timing of natural conditions."

The Agency believes that while the national goal calls for "the prevention of *any* future, and the remedying of *any* existing impairment in visibility" (emphasis added), by establishing exemptions in Sections 169A(c)(1) and 169A(c)(2) of the Act, Congress clearly recognized that there may be circumstances where impairment may exist but, due to the circumstances surrounding that impairment, reduction or elimination of the impairment may not be appropriate.

Secondly, in determining whether impairment is significant, the Administrator will evaluate:

(a) How frequently the impairment occurs,

(b) The extent or degree of the impairment,

(c) The time at which the impairment occurs,

(d) The intensity of the impairment, and

(e) The duration of the impairment.

There are clearly cases where impairment may exist but does not interfere with the public's enjoyment of the mandatory class I Federal area as pointed out by several commenters. An example may be where the impairment occurred only when visitor use was negligible or nonexistent. Since the intent of Congress, through Section 169A, is to protect the public's enjoyment of these areas, impairment which does not affect public enjoyment should not be considered significant. The Administrator will consider the recommendations of the appropriate Federal Land Manager since the Federal Land Manager has expert knowledge of an area.

(5) *Reanalysis of BART*—Proposed Section 51.306(e) would require that BART be reanalyzed at such times as the Administrator determines that new technology exists for the control of a pollutant having an impact on visibility. The basic purpose of this requirement for reanalysis is to ensure the maximum opportunity for the consideration of new technology for the control of visibility impairment.

Where a source has had to retrofit controls for a pollutant as a result of a BART analysis, EPA believes that there may be instances

where the source should not later be subject to a different requirement for retrofit control of that pollutant. However, EPA believes that, as a part of its long-term strategy, a State should reevaluate each existing major stationary source for the applicability of new controls for all pollutants. Since the State would be free to require additional controls for a pollutant even where BART has previously been required for that pollutant the State may desire to do so as part of its long-term strategy. Where the control representing BART has not been previously required for a pollutant reanalyzed at the source, the State must require the imposition of such control as indicated by this reanalysis. This reanalysis must also include a consideration of in-place controls.

EPA recognizes that a broader "grandfathering" of sources which have applied BART controls could insulate such sources from future BART requirements for a pollutant even if the previous BART control was minimal. For example, a power plant would have an incentive to modify its burners to reduce emissions of NO_2 in response to a BART analysis in order to escape further BART requirements for NO_2 even though much more effective control technology may become available in the future. EPA, thus, specifically invites comments on this and other approaches to the problem. Several alternatives commenters may wish to address are:

(1) Requiring reanalysis of sources and imposition of controls on pollutants regardless of previous BART determinations.

(2) Requiring automatic, periodic review of all BART determinations;

(3) Requiring reanalysis of sources and implementation of controls as a reasonable progress measure;

(4) Requiring reanalysis of BART for all pollutants during each new phase of regulatory development; and

(5) Not requiring reanalysis.

Commenters are encouraged to include a discussion of the legal and policy basis for any alternatives recommended.

6. *Visibility monitoring*—Many commenters addressed the issue of visibility monitoring. Many of these comments dealt with whether EPA, the State, or the Federal Land Manager should have the primary responsibility for visibility monitoring. Today's proposal recognizes the need for cooperation and consultation in the area of visibility monitoring, not only in the area of instrumentation but in the use and interpretation of data obtained. Although EPA will be continuing research in the area of visibility monitoring, primarily for the purpose of developing EPA-approved standardized ("reference method") visibility monitoring techniques and data collection for validation of analytical techniques, this proposal would require the consideratin [*sic*] of visibility monitoring and data in two aspects. The first of these areas is the development of a visibility monitoring strategy. The Agency believes that the use of available monitoring data and the collection of supplemental data can serve the State well in preparation of the SIP revision and the assessment of the long-term strategy's ability to make reasonable progress toward the national goal. In this strategy the State is expected to discuss the use of visual observations and other monitoring techniques as decided upon by the State after consultation with the Federal Land Manager. It is anticipated that the supervisor of the particular mandatory class I Federal area will be able to provide some assessment over a period of time as to the impairment that exists or may not exist in the area. Where agreements of this type can be reached they should be incorporated into the monitoring strategy.

The second aspect of visibility monitoring is the consideration of the need for monitoring associated with a proposed major emitting facility or major modification. The permitting authority should consult with the Federal Land Manager on the individual decision and take into account available visibility monitoring data and the need for additional monitoring data. The authority can require new sources collect such data under the auspices of the PSD program. Where necessary, additional assistance can be obtained through the EPA Regional Offices.

Though the Agency is not prepared to promulgate "reference methods," there is substantial information available regarding visibility monitoring methods currently in use. A discussion of techniques currently in use and under evaluation for visibility monitoring may be found in "Protecting Visibility: An EPA Report to Congress." Interim guidance on monitoring is expected to be released by the Agency in the near future. After appropriate public review and comment, the interim guidance will be incorporated by reference in the promulgated visibility regulations. A Federal Register notice will announce the document's availability.

7. *Visibility modeling*—Almost all commenters on the issue of visibility modeling agreed with the position set forth in the ANPR that visibility models should be used only with a recognition of their limitations. However, a substantial number of commenters expressed the opinion that limitations on visibility models were so substantial as to totally preclude their use. As noted in the ANPR, the Agency is attempting to validate several analytical techniques for the purpose of addressing visibility impacts. The Agency believes that although these techniques are currently unvalidated, they can provide valuable input in the decision-making process when combined with common sense interpretations of all available data. The Agency believes that the proposed regulations recognize both the limitations and the presence of these analytical techniques.

EPA is currently attempting to validate these techniques through various research programs, and will make available for public review and comments these results as soon as they are available. Additionally, the Agency is preparing interim guidance on the use of analytical techniques and will also make this available for review and public comment.

Results obtained from visibility analytical techniques maybe useful in addressing the impacts of single sources on visibility in two parts of this proposed rule. The first of these is the BART guidelines, the use of which is optional except for power plants with a generating capacity in excess of 750 megawatts. This guideline suggests the use of analytical techniques to estimate the degree of

improvement anticipated from control of certain pollutants. The techniques would estimate the level of impairment under existing conditions and compare it with the impairment estimated by the "model" under a new control scenario. EPA specifically solicits comment on whether this comparison to existing conditions is appropriate in all circumstances, for example, where existing impairment may be attributed in part to other sources which have not been required to install reasonably available control technology.

EPA does not believe these predicted levels of impairment should be used in an absolute manner for all pollutants. Instead, the Agency intends that the predicted levels of impairment only be used to assess the relative improvement that may be achieved under the new control scenario. However, EPA believes it is important to qualify this predicted relative improvement with all available data. For example, it would be useful to compare the impairment resulting from an actual source similar to the analyzed source to that estimated under the new control scenario. Thus, the guideline requires the estimated relative improvement to be qualified by other available data. While the above discussion qualifies the use of analytical techniques, it is important to remember that any such analysis should use all available tools recognizing that each provides valuable information relevant to the analysis and the limitations on the tool should be recognized.

The other program area for which analytical results can be of value is in the evaluation of visibility impacts from new sources. An interim guidance document for the assessment of these new sources is being developed and will be made available for public comment.

8. *Intergovernmental cooperation* — The Agency received 20 comments pertaining to the roles of States, Federal Land Managers, and EPA in the development and implementation of visibility regulations. Nine commenters felt the regulations should be structured to provide authoritative input form *(sic)* the Federal Land Managers. Others felt the Act gave the State final decision-making authority and the Federal Land Manager only an advisory role.

The regulations, as proposed, provide an active role for both Federal Land Managers and States. The Federal Land Managers are guaranteed input into the SIP revision process, including identification of integral vistas and concurrence on any BART exemption. The State, however, retains final authority for the development of the SIP. BART determinations, and implementation of the visibility program. EPA would remain primarily in a technical and policy advisory position, continuing research on visibility and developing Phase II regulations when it becomes technically feasible.

EPA believes the visibility program should truly be a cooperative one. While the States are aware of local conditions and preferences, the Federal Land Managers remain most familiar with conditions unique to the parks and wildernesses and the importance of the visibility values to the visitor experience in an area. The regulations are structured to provide input into the decision-making process by both the States and the Federal Land Managers, but EPA believes for the visibility program to be a viable one, all affected parties must work together.

Several commenters were also concerned that the subjective judgment of the Federal Land Managers may be given too much weight. These commenters suggested that objective guidelines or specific minimum criteria be applied to any decision by the Federal Land Managers. Under the proposal, judgments by the Federal Land Managers will be necessarily somewhat subjective because visibility is a perceived quality and difficult to quantify. However, many of these decisions, such as identification of integral vistas, are to be made according to EPA guidelines or criteria which will provide consistency and prevent random, capricious determinations. Others will be made in coordination with the States or with assistance from EPA.

9. *Protection of integral vistas* — The proposed regulations would require a State to protect any integral vistas which are identified by the Federal Land Manager within 90 days of the promulgation of these regulations, unless the State in its SIP

demonstrates to the Administrator that the Federal Land Manager did not identify the vista according to the criteria set out in "Criteria for the Identification of Integral Vistas". A vista identified by the Federal Land Manager more than 90 days after promulgation would have to be protected for visibility not later than at the time of the periodic review of the long-term strategy.

The reason for the 90-day period for identification of vistas to be affected by this first phase of visibility SIP revisions is that the Act requires SIPs to be revised within 9 months of the promulgation date and, in order for a state to meet this deadline, it will need to know within 90 days of the promulgation date what integral vistas must be protected in that revision. Some Federal Land Managers have informed EPA that identification within the 90-day period will be possible, although difficult, to meet while others have commented that, because of the need to integrate visibility protection with planning for certain other management objectives, identification of vistas within 90 days of promulgation is unlikely.

Under the proposed regulations, the decision when and whether to identify an integral vista is primarily the responsibility of the appropriate Federal Land Manager who, under the Act (and the legislation creating an area), has a special role in protecting the values of an area.

Although EPA recognizes the difficulties in identifying the vistas within 90 days, it believes in most cases the appropriate Federal Land Manager should be able to identify the integral vista within that time. All the areas have already been analyzed pursuant to action under Section 169A(a)(2) to determine whether visibility is an important value. Also, since it seems unlikely that EPA will promulgate these regulations before November 1980, the time by when the integral vistas must be identified to receive protection in the first phase of SIP revisions for visibility is still many months away. EPA is releasing the identification criteria for public comment along with this proposal and it should be possible for the Federal Land Managers to take preliminary steps now to prepare for the identification of integral vistas, even though the criteria may

change in light of comments received. For example, one important criterion unlikely to be changed by public comment is whether the legislation creating an area specifically mentioned in integral vista as a reason for its being given special protection. It is important to note that the identification criteria present two different techniques for the final identification process. Comment is specifically requested on the appropriateness of both techniques.

Over the next few years Federal Land Managers will be developing area management programs which could include identification of additional integral vistas to be protected. As a result EPA has proposed a procedure which affords protection of integral vistas which have been identified by the Federal Land Manager prior to the calendar year in which a new source submits a complete permit application. However, EPA believes that this procedure could result in some uncertainty for new sources and therefore has proposed that no additional vistas be identified beyond December 31, 1985 for any Federal class 1 area which exists at the time of promulgation of these regulations. Additionally, the proposed procedure would allow a new source to escape the requirement for protection of an integral vista that may have been identified nearly a year before, by submitting a complete application late in the calendar year in which the vista was identified. The Agency also believes that the procedures for the reclassification of Federal Lands to class 1 should also involve the identification of integral vistas in order to prevent such uncertainties in the future. The Agency specifically solicits comments on whether this procedure will result in too much uncertainty for new sources between now and December 31, 1985 and on other systems which could be used to accomplish the objective of protecting new integral vistas while providing time for the Federal Land Manager to develop management plans for their areas. Based upon the comment received, EPA may retain, modify, or delete this requirement. Three alternatives which the Agency is soliciting comment on are:

(1) providing protection for integral vistas identified at least a minimum time period prior to the submission of a complete application,

(2) a requirement that the source consult with appropriate Federal Land Manager at some designated interval prior to submission of the application and requiring protection of vistas identified within a specific time period after that consultation, and

(3) a provision which allows the Federal Land Manager to identify additional integral vistas within 30 days of being notified about a new source permit.

EPA recognizes that there are other procedural mechanisms that could be devised for identifying integral vistas. One alternative might be a procedure like that in Section 169A(a)(2) of the Act, whereby the Federal Land Managers recommend integral vistas to EPA, and EPA then promulgates the list with any change it feels is appropriate. EPA believes the proposed approach avoids the unnecessarily protracted process involved in this alternative, but specifically solicits comments on this and other alternative procedure for identification of integral vistas.

There has been comment that Congress did not intend to protect vistas which include places outside the boundaries of mandatory class I Federal areas. This intent is expressed, these commenters say, in the plan language of Section 169A(a)(1) which identifies the national goal of visibility protection "in" mandatory class I Federal areas. Examination of the statutory language and legislative history, however, reveals that they both support EPA's position and that removing integral vistas from protection would seriously undermine the purpose of Section 169A.

EPA's proposal agrees with the plain language of Section 169A. It protects no views into a class I area from outside the area as some commenters urged. The only visibility values protected are those "in" a mandatory class I Federal area, just as Section 169A provides. This follows because "visibility" is a perceptual value and the perception occurs "in" an area.

In identifying the visibility values of a mandatory class 1 Federal area, both the House and Senate Report counsel attention to the fundamental purposes for which Congress established such lands, and both quote the 1916 National Parks Organic Act (16 U.S.C. Section 1) that the purpose of such lands "is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" [H. Rep. No. 95-294, 95th Cong., 1st Sess. 137 (1977), S. Rep. No. 95-127, 1st Sess. 36 (1977)]. In 1978, Congress amended this act to "reaffirm" this purpose and direct that the "protection of [areas of the National Park System] shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of values and purposes for which these various areas have been established, except as may have been or shall be directly or specifically provided by Congress" [16 U.S.C. Section 1a-1]. The specific legislation establishing the mandatory class I Federal areas cited in many cases the magnificent scenery of the area as a reason for its establishment [44 FR 69122 (November 30, 1979)]. Congress, in framing the visibility regulations, clearly was aware that many of these areas were set aside because of their "extensive vistas, expansive scenic views, unique natural formations or primitive value" [123 Cong. Rec. S9172 (daily ed. June 8, 1977)]. EPA's proposal carries out Congress' intent that air quality-related values (including visibility) be protected. These values include vistas, regardless of the location of the places viewed, if they are an integral part of the visibility experience in an area. Some areas may have no integral vistas; others may. For example, the view from Mesa Verde National Park of Shiprock (New Mexico), a unique natural feature, could be identified as essential to the public enjoyment and values of the park. By requiring the participation of interested persons and a careful analysis of pertinent criteria, the proposal assures that integral vistas will not be identified carelessly

as an air quality-related value of the area but, rather, that any such identification will result from a prudent, circumscribed effort.

The legislative history contains many references to the "grand," "distant," and "breathtaking" "vistas" and "panoramas" of mandatory class I Federal areas which merit visibility protection [See, e.g., H. Rep. No. 95-294, supra, at 148, 204, 205; 123 Cong. Rec. H8661,H8669 (daily ed. August 4, 1977)]. In addition, Congress repeatedly stressed that public enjoyment of the parks and the economic benefits tourism brings were reasons for protecting visibility in mandatory class I Federal areas [See, e.g., H. Rep. No. 95-294, supra, at 204]. Even opponents of far-ranging protection against deterioration of air quality recognized that "visibility" means the ability to see distant places and panoramic sweeps like the view from the top of a mountain, and that such visibility is a requisite to the full enjoyment of mandatory class I Federal areas [123 Cong. Rec. S9249 (daily ed. June 9, 1977)]. Nowhere is there the suggestion that grand vistas integral to public enjoyment of a mandatory class I Federal area were not entitled to protection if the place viewed lay outside the area. The reason is clear: denying such integral vistas protection would compromise Congress' intention to preserve the scenic values for which the area was created and which the public enjoys.

Another commenter inquired whether EPA intends to interpret the word "within" in Section 165(d)(2) to include integral vistas. As noted previously, EPA has promulgated PSD regulations implementing this section and this aspect of the regulations was not at issue in the *Alabama Power* decision which adjudicated various other issues relating to those PSD regulations. Whether a Federal Land Manager considers an integral vista to contribute to a visibility value of an area is for him to decide; he has the "affirmative responsibility" to protect those values. Although, as stated, EPA does not intend to change its PSD regulations regarding visibility protection, EPA does interpret both the statute and its PSD regulations as authorizing the protection of integral vistas. Congress

could not have intended such vistas to be protected by one program and impaired by the other.

EPA urges that proposed major emitting facilities, early in the planning process, discuss with the appropriate Federal Land Manager the visibility values of the area including the existence of any integral vistas.

10. *Section 51.306 Long-Term Strategy* — Consistent with Section 169A(b)(2)(B), the proposed regulations would require each plan to contain a long-term strategy for making reasonable progress toward meeting the national goal. The proposal requires the strategy to contain several measures and suggests others the State should consider in devising the "mix" of measures appropriate for the particular mandatory class I Federal area circumstances.

Because of the limited applicability of BART requirements, the development of long-term strategies will be central to making reasonable progress toward the national visibility goal. Consequently, EPA views the requirement as an exceedingly important one, even though it will be necessarily somewhat limited by the phased approach to the visibility program as discussed above. The long-term strategy can, however, begin to address the more complex problems such as regional haze. For example, although visibility impairment resulting from multi-source situations may not be reasonably attributable to any specific source, other programs for control of such sources should consider the impact, to the degree possible, of control decisions on visibility.

The ANPR suggested that, as an element of a long-term strategy, EPA might require the setting and meeting of reasonable progress visibility objectives. Today's proposal would not require specific objectives because EPA believes such objectives could be unduly rigid, easily misinterpreted, and difficult to assess. The proposed regulations would, however, require periodic review by the State and a report to the public on the efficacy of the long-term strategy. This review would primarily assess the effectiveness of the long-term strategy and in this way may be viewed as objective oriented.

Also required would be review of the impacts of all pollutants emitted by a source previously analyzed for BART when the Administrator determines that new control technology is available. Although the proposal would not automatically require the installation of additional control equipment for a pollutant for which a BART analysis has already imposed retrofit control, a State would have to do the analysis to determine whether additional retrofit control for the pollutant would be a sensible step toward the national visibility goal. In many cases EPA believes it would be a sensible step and, therefore, urges States to require imposition of retrofit control for any pollutant regardless of its control history if a BART reanalysis to consider new control equipment indicates such retrofitting is appropriate.

The proposal would require all new major emitting facilities and major modifications, as those terms are defined in EPA's PSD regulations, 40 CFR 51.24 and amendments, to be reviewed for their impacts on visibility for any area listed in 40 CFR Part 81, Subpart D. EPA is currently preparing a guideline for such review. This requirement will assure that any major new source that may impact visibility in any of these areas will be reviewed for such impacts. For example, a source located in a nonattainment area may not be reviewed under the PSD program for visibility impacts in such areas [*Alabama Power*, supra, 13 ERC at 2016].

Proposed Section 51.306(f) sets out certain measures which the State must consider in developing its long-term strategy. Although the State may develop its own particular "mix" of measures, the long-term strategy must be sufficient to make reasonable progress toward the national visibility goal. In evaluating the adequacy of the long-term (10-15 years) strategy, EPA will consider whether the elements incorporated provide sufficient consideration of impacts on visibility so that reasonable progress toward the national goal is a reasonable assumption. In order to ensure this, many of the elements are mandatory, and the State must explain why it did or did not incorporate the optional elements.

An essential starting point in developing long-term strategies is assessment of other air pollution related control programs. Many of these programs, such as SIP emission limits and compliance schedules for attainment and maintenance of the national ambient air quality standards, new source performance standards, motor vehicle emission standards, and PSD will likely contribute to making reasonable progress toward the national visibility goal. Once the impact of these and other regulatory programs is evaluated, the need for additional measures can be assessed.

Additional measures that must be considered include additional emission limitations and schedules for compliance, source retirement and replacement schedules, and smoke management techniques. Whether all of these measures (or other ones) are necessary to a long-term strategy for making reasonable progress toward meeting the national visibility goal depends on the particular circumstances of the area. Many commenters to the ANPR favored this flexible, area-specific approach. Others, however, felt EPA should establish a national visibility objective along with well designed timetables to monitor reasonable progress. EPA believes that regional differences in meteorological conditions around the country and varying degrees of visibility impairment and land management practices in and around the class I areas should be reflected in the visibility program. EPA's proposal would allow for this; setting a national visibility objective would not. The proposal is consistent with the Act and its legislative history which also required the BART analysis to consider local factors and recognized that a national visibility standard would be "impracticable" [H. Rep. No. 95-294, supra, at 205].

One area-specific measure, control of prescribed burning, i.e., burning for agricultural and forestry management purposes, will need to be considered in certain areas. Substantial comment was received on prescribed burning, its importance to forest and range management, and ability to influence its extent, timing, and duration. One comment suggested that prescribed burning was not man-made (a natural part of many ecosystems) and, thus, did not

constitute "visibility impairment." Others noted the impacts of smoke from prescribed burning. EPA recognizes that prescribed fire is an ecologically sound forest and range management tool used both inside and outside class I areas. The Agency does not intend that prescribed burning be eliminated or unnecessarily restricted, but rather, that its impacts on visibility be reduced where feasible and appropriate. Prescribed burning is a necessary part of land management but EPA believes there are techniques to limit its effect on visibility. EPA has requested the Forest Service, U.S. Department of Agriculture, in coordination with land management and air regulatory agencies, to prepare a management guideline for the use of techniques to manage smoke from prescribed fires. It is anticipated that this guideline will not only include evaluation of alternatives to burn but will also suggest best management practices for minimizing adverse effects of smoke. This document is scheduled for completion in early 1981 and EPA intends to make a draft of the guideline available for public comment when it is completed.

(11) *Application of section 169A to new sources* — Today's proposal limits the BART requirements to certain existing sources, but applies the other requirements of Section 169A (such as the strategy for making reasonable progress toward the national goal) to new sources as well. Although EPA has received comment that the requirements of Section 169A apply to existing sources only, the Agency feels the plain language and legislative history of the visibility provisions support this proposal, as does common sense.

The plain language of Section 169A shows that this section is not limited to existing sources. The national goal toward which the regulations must assure reasonable progress encompasses not only the "remedying of any existing" impairment of visibility, but also "the prevention of any future" impairment [Section 169A(a)(1)]. The recommendations in the Report to Congress, which are to be taken into account in the regulations, must include "methods for *preventing* and remedying * * * manmade air pollution and resulting visibility impairment" (emphasis added) [Sections

169A(a)(3)(C),(b)(1)]. While the BART requirement in Section 169A(b)(2)(A) focuses on control of existing sources, subparagraph (B) expressly requires "a long-term (ten to fifteen years) strategy for making reasonable progress toward meeting the national goal." There is no indication that a 15-year plan must be restricted to only existing sources.

The language of other sections of Part C of Title I of the Act underscores the intent to apply Section 169A to new sources in order to prevent future air degradation. In section 160, Congress states the purposes "of this part." "This part," means Part C. Part C includes Section 169A. Since nearly all the purposes in Section 160 relate to future goals and activities, and hence to new sources, it is apparent that Section 169A applies to new as well as existing sources. Similarly, Section 167, which is also in Part C, mandates enforcement action by the Administrator "to prevent the construction of a major emitting facility which does not conform to the requirements of this part. . . ." If Congress had intended this enforcement authority to be limited to PSD requirements, it would have referred to "this subpart." But using the term "this part," Congress included Section 169A. There would be no necessity to include the requirements of Section 169A in Section 167 unless Section 169A applied to new as well as existing sources.

The comment that Section 169A is limited to existing sources minimized the plain language of the Act and addressed two passages in the legislative history. The first is from the Conference Report:

"A major concern which prompted the House to adopt the visibility protection provision was the need to remedy existing pollution in Federal mandatory class I areas from existing sources. Issues with respect to visibility as an air quality value in application to new sources are to be resolved within the *procedures* for prevention of significant deterioration." (emphasis added). H. Rep. No. 95-564, supra, at 155.

This passage simply recognizes that existing sources, in addition to new sources, must be controlled in order to make progress toward the national goal and that, for purposes of visibility

protection, program procedures for new sources and those for existing sources be dovetailed so as to minimize any bureaucratic burden. Nothing in this passage, however, is inconsistent with EPA's proposal. The second passage is Senator Muskie's response to Senator McClure's question whether Section 169A applies only to existing sources. Senator Muskie replied:

"Yes, the Federal interest is limited to existing sources, which have been in existence 15 year [*sic*] or less. Visibility restrictions with regard to new sources would result under the [PSD] provisions." 123 Cong. Rec. S13709 (daily ed. Aug. 4, 1977).

Senator Muskie, however, is apparently speaking of the BART requirement being limited to existing sources and, like the conference report, of the desire to dovetail new source visibility requirements with PSD procedures.

Thus, these two passages of the legislative history, taken alone, do not support the commenter's position nor do they justify deviation from the plain language of the statute. Further, the House Committee left no doubt that Section 169A was intended to apply to new sources:

"* * * the committee recognizes that one mechanism which has been suggested for protecting these areas, the mandatory class I increments of new Section 160 [subpart 1 "Prevention of Significant Deterioration"] do not adequately protect visibility in class I areas.

* * * in light of the foregoing, the committee concluded that a separate approach was necessary to control the visibility problem, in mandatory Federal class I areas.

* * * The committee recognizes that [the national] goal cannot be achieved overnight. But the very difficulty of curing existing problems after the fact argues strongly for a strong preventive approach for the future." Rep. No. 95-294, supra, at 205-206.

The opponents of the measure in the House Committee also agreed that it would apply to new as well as existing sources. Id. at 529.

The conference committee report indicates that "[t]he conferees agreed to the House provision [on visibility protection] with modifications." The point, noted above, that the conference report does not in any way indicate that the substantive requirements of Section 169A were applicable only to existing sources was underscored by various House members:

"* * * as in the House bill, [Section 169A] as agreed to in conference applies both to new and existing sources. As pointed out in the House Committee report, merely meeting class I increments under prevention of significant deterioration will not be adequate to assure visibility protection. Clearly the conferees did not want to impose two separate pre-construction permit requirements for a new source for the purpose of assuring compliance with requirements. One permit should suffice." 123 Cong. Rec. H8663 (daily ed. Aug. 4, 1977).

Rep. Rogers provided further explanation on this point in his statement accompanying the technical amendments to the 1977 Clean Air Act Amendments (P.L. 95-190):

"It was suggested that the apparent conflict between the reading of some Senators and the House view on the visibility section (section 169A) should be resolved by a technical amendment. However, such an amendment seems unnecessary to me. The conference provision essentially adopted the House bill's approach. This is made clear at page 155 of the conference report. Nowhere in the conference report is it suggested that any limitation of the provision to existing sources was adopted by the conferees. While the report recognizes that '[a] major concern which prompted the House to adopt the visibility protection [provision] was the need to remedy existing pollution,' it does not state, nor does it imply that 'existing sources' were the only concern. As the House Committee report makes clear, new sources were also of concern. (H. Rep. No. 95-294). What sense would it make to solve existing problems, but allow the same situation to develop as a result of new sources?

The conference committee, of course, did not want to subject new sources to two separate procedural steps under the PSD and

visibility protection provisions. That is why the conference report states, 'Issues with respect to visibility * * * in application to new sources are to be resolved within the *procedures* for prevention of significant deterioration.' (emphasis added). But in the one-stop permit process for new or modified major sources, the substantive criteria and standards of PSD and visibility provisions would have to be met. This point is underscored by the statutory language of section 169(A)(1) retaining as a national goal the prevention of any future * * * impairment of visibility in mandatory class I Federal areas. Given this clear statement of legislative intent, I do not believe any technical or conforming amendment is necessary." 123 Cong. Rec. H11958 (Nov. 1, 1977).

To answer Rep. Ropers' [*sic*] rhetorical question, it would make no sense to create a visibility program which attacks the problem by controlling older sources, but allows new sources simultaneously to create the problem anew. In effect, this would ignore the portion of the national goal calling for the prevention of new impairment.

(12) *Visibility Protection of Non-Mandatory Class I Lands* — The regulations required by Section 169A are limited to mandatory class I Federal areas where visibility is an important value [Section 169A(b)(2)]. In contrast, Section 165(d)(2), which concerns new sources, applies to Federal lands in all class I areas. As noted above, EPA's PSD regulations also are not limited to "mandatory class I Federal areas," and this aspect of the regulations was not at issue in *Alabama Power*. This means that Federal Land Managers also have an "affirmative responsibility" to protect air quality-related values with respect to Federal lands that are redesignated class I by the States (or Congress). This directive to Federal Land Managers to respect State redesignations is consistent with the general principle in the Act to recognize State's authority to set stricter standards than the Act requires [Sections 116, 164].

The legislative history supports this interpretation. The summary and the discussion of Section 165(d) in the Senate Report express no intention to limit the air quality-related values test to mandatory class I Federal areas, but instead consistently refer to

"class I areas." S. Rep. No. 95-294, supra, at 35-36. The Conference Report says flatly that the "air quality-related values test, including visibility, is applied to sources affecting class I areas" [H. Rep. No. 95-564, 95th Cong., 1st Sess. 153 (1977)]. Statements by conferees during House debate on the Conference Report corroborate this construction [123 Cong. Rec. H866], H8660 (daily ed. August 4, 1977)].

Section 165(d) does not, however, apply to redesignations of reservation land to class I by Indian tribes. This is because Indian land is not Federal land, and Indian tribes are not Federal Land Managers. The Act treats separately lands within the boundaries of Indian reservations and lands subject to the jurisdiction of Federal Land Managers.

It is the "Federal Land Manager * * * charged with direct responsibility for management of any lands within a class I area" that Section 165(d)(2) gives an "affirmative responsibility to protect the air quality-related values (including visibility) of any such lands within a class I area." Section 302(i) defines "Federal Land Managers" as, "with respect to any lands in the United States, the Secretary of the department with authority over such lands." This definition dropped the language from the Senate bill which included as Federal Land Managers "Indian tribes which have legal jurisdiction over tribal lands" [S. 252, 95th Cong., 1st Sess. Section 6 (May 10, 1977)]. This does not appear to have been inadvertent, since the Conference Report states the Federal Land Manager is "the Secretary of the Department which has the authority over any specific *Federal land*" (emphasis added) [H. Rep. No. 95-564, 95th Cong., 1st Sess. 172 (1977). Thus, Indian tribes are not Federal Land Managers.

As for the term "Federal land," Congress intended it to "hold its traditional context, and impl[y] no new departure from definitions or systems of classifying Federal lands and land-related rights" [S. Rep. No. 95-127, supra, at 34]. The traditional position of the Department of the Interior has been that lands within lands within Indain [*sic*] reservations are not Federal lands. There is,

therefore, no Federal Land Manager to be charged with the "affirmative responsibility" of protecting under Section 165(d) Indian Lands redesignated class I. This interpretation is consistent with Part C of the Act which treats Indian lands uniquely and sets out in Section 164(e) a mechanism for protection of the air quality-related values of Indian lands affected by a redesignation.

(13) *National Emission Standards for Visibility* — One commenter suggested that the agency establish uniform national emission standards for the major stationary sources, but this would violate the intent of congress which, in regard to the determination of BART, is clearly stated in Section 169A(b)(2)(A): "each major stationary source * * * shall procure, install, and operate, as expeditiously as practicable (and maintain thereafter) the best available retrofit technology, *as determined by the State*" (emphasis added). Section 169A(b) requires BART for large fossil-fuel fired power plants (750 MW) to "be determined pursuant to guidelines promulgated by the Administrator * * *" However, the only general authority of the administrator to determine BART for specific sources is for plans promulgated by the Administrator where the State has failed to fulfill the requirements of the Act. The Bart [*sic*] considerations include available technology, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any existing pollution control technology in use at the sources, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. Each of these considerations is source-specific and, therefore, BART must be decided on an individual source-by-source basis. Indeed, the conference committee specifically eliminated the regulations and Federal guidelines for determining this technology required by the House passed bill for determining BART except for fossil-fuel fired generating power plants having a total generating capacity in excess of 750 megawatts [H. Rep. No. 95-564, Supra, at 155]. The BART guideline for these large power plants is available for public review and comment (See Document Availability). Commenters should

recognize that the retrofit of control technology is usually much more expensive than the incorporation of similar technology during construction of a new source. The Agency particularly solicits all available factual information on the cost of retrofitting control technology on existing large power plants.

(14) *Baseline* — In the ANPR, EPA introduced the term "baseline," stating that it might be useful in defining certain other terms used in the visibility program. The ANPR did note, however, that both of the contemplated definitions of "baseline" had drawbacks. Today's proposal does not use the term. EPA believes its use, as indicated by the comments received, would lead to confusion.

(15) *Plume blight* — Fifteen commenters expressed opinions on the definitions of plume blight and regional haze presented in the ANPR. EPA's intent in the ANPR was to focus on clearly definable cases of visibility impairment for purposes of Phase I regulations. The comments indicated that the term "plume blight" caused some confusion. Therefore, the Agency is defining the scope of the Phase I regulations by the term "reasonably attributable," which is defined as attributable to a single source or group of sources by visual observation or other monitoring technique. The key distinction between this Phase I definition and future phases is by what means a source can be identified. Most sources which contribute to long-range transport visibility impacts cannot be adequately assessed for their impacts on such impairment at present. As mentioned previously, these forms of impairment will be dealt with in future phases of the program.

One commenter felt water vapor should not be considered as visibility impairment. EPA agrees with this assessment. Water vapor plumes are generally confined to an area near the source and should not have an impact on visibility in a mandatory class I Federal area. However, there are cases in which the steam from an industrial process combines with other substances such as SO_2 or NO_2. This is not considered water vapor by the Agency and could be identified as visibility impairment.

CODE OF FEDERAL REGULATIONS

TITLE 40—PROTECTION OF ENVIRONMENT

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION AND SUBMITTAL OF IMPLEMENTATION PLANS

SUBPART P—PROTECTION OF VISIBILITY

AUTHORITY: SECS. 110, 301(a), 313, 319, Clean Air Act (42 U.S.C. 7410, 7601(a), 7613, 7619).

§ 51.300 Purpose and applicability

(a) *Purpose.* The primary purposes of this Subpart are (1) to require States to develop programs to assure reasonable progress toward meeting the national goal of preventing any future, and remedying and (*sic*) existing, impairment of visibility in mandatory Class I Federal areas which impairment results from man-made air pollution, and (2) to establish necessary additional procedures for new source permit applicants, States, and Federal Land Managers to use in conducting the visibility impact analysis required for new source under § 51.24.

(b) *Applicability.* (1) The provisions of this subpart are applicable to:

(i) Each State which has a mandatory Class I Federal area identified in part 81, subpart D, of this title, and (ii) each State in which there is any source the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area.

(2) The provisions of this Subpart are applicable to the following States:

(i)Alabama

(ii)Alaska

(iii)Arizona

(iv)Arkansas

(v)California

(vi)Colorado
(vii)Florida
(vii)Georgia
(ix)Hawaii
(x)Idaho
(xi)Kentucky
(xii)Louisiana
(xiii)Maine
(xiv)Michigan
(xv)Minnesota
(xvi)Missouri
(xvii)Montana
(xviii)Nevada
(xix)New Hampshire
(xx)New Jersey
(xxi)New Mexico
(xxii)North Carolina
(xxiii)North Dakota
(xxiv)Oklahoma
(xxv)Oregon
(xxvi)South Carolina
(xxvii)South Dakota
(xxviii)Tennessee
(xxix)Texas
(xxx)Utah
(xxxi)Vermont
(xxxii)Virginia
(xxxiii)Virgin Islands
(xxxiv)Washington
(xxxv)West Virginia
(xxxvi)Wyoming

§ 51.301 Definitions.

For purposes of this subpart:

(a) *Adverse impact on visibility* means, for purpose of section 307, visibility impairment which interferes with the management, protection, preservation, or enjoyment of the visitor's visual experience of the Federal Class I area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency and time of visibility impairments, and how these factors correlate with (1) times of visitor use of the Federal Class I area, and (2) the frequency and timing of natural conditions that reduce visibility. This term does not include effects on integral vistas.

(b) *Agency* means the U.S. Environmental Protection Agency.

(c) *Best Available Retrofit Technology (BART)* means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation mustbe established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

(d) *Building, structure, or facility* means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities must be considered as part of the same industrial grouping if they belong to the same *Major Group* (i.e., which have the same two-digit code) as described in the *Standard Industrial Classification Manual, 1972* as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101-0066 and 003-005-00176-0 respectively).

(e) *Existing Stationary Facility* means any of the following stationary sources of air pollutants, including any reconstructed source, which was not in operation prior to August 7, 1962, and was in existence on August 7, 1977 and has the potential to emit 250 tons per year or more of any air pollutant. In determining potential to emit, fugitive emissions, to the extent quantifiable, must be counted.

(1) Fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input,

(2) Coal cleaning plants (thermal dryers),

(3) Kraft pulp mills,

(4) Portland cement plants,

(5) Primary zinc smelters,

(6) Iron and steel mill plants,

(7) Primary aluminum ore reduction plants,

(8) Primary copper smelters,

(9) Municipal incinerators capable of charging more than 250 tons of refuse per day,

(10) Hydrofluoric, sulfuric, and nitric acid plants,

(11) Petroleum refineries,

(12) Lime plants,

(13) Phosphate rock processing plants,

(14) Coke oven batteries,

(15) Sulfur recovery plants,

(16) Carbon black plants (furnace process),

(17) Primary lead smelters,

(18) Fuel conversion plants,

(19) Sintering plants,

(20) Secondary metal production facilities,

(21) Chemical process plants,

(22) Fossil-fuel boilers of more than 250 million British thermal units per hour heat input,

(23) Petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels,

(24) Taconite ore processing facilities,

(25) Glass fiber processing plants, and

(26) Charcoal production facilities.

(f) *Federal Class I area* means any Federal land that is classified or reclassified *Class I*.

(g) *Federal Land Manager* means the Secretary of the department with authority over the Federal Class I area or, with respect to Roosevelt-Campobello International Park, the Chairman of the Roosevelt-Campobello International Park Commission.

(h) *Federally enforceable* means all limitations and conditions which are enforceable by the Administrator under the Clean Air Act including those requirements developed pursuant to parts 60 and 61 of this title, requirements within any applicable State Implementation Plan, and any permit requirements established pursuant to § 52.21 of this chapter or under regulations approved pursuant to part 51, 52, or 60 of this title.

(i) *Fixed capital cost* means the capital needed to provide all of the depreciable components.

(j) *Fugitive Emissions* means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

(k) *In existence* means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations and either has (1) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (2) entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in a reasonable time.

(l) *Installation* means an identifiable piece of process equipment.

(m) *In operation* means engaged in activity related to the primary design function of the source.

(n) *Integral vista* means a view perceived from within the mandatory Class I Federal area of a specific landmark or panorama located outside the boundary of the mandatory Class I Federal area.

(o) *Class I Federal Area* means any area identified in part 81, subpart D of this title.

(p) *Major Stationary Source* and *major modification* mean *major stationary source* and *major modification*, respectively, as defined in § 51.24.

(q) *Natural Conditions* includes naturally occurring phenomena that reduce visibility as measured in terms of visual range, contrast, or coloration.

(r) *Potential to emit* means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

(s) *Reasonably attributable* means attributable by visual observation or any other technique the State deems appropriate.

(t) *Reconstruction* will be presumed to have taken place where the fixed capital cost of the new component exceeds 50 percent of the fixed capital cost of a comparable entirely new source. Any final decision as to whether reconstruction has occurred must be made in accordance with the provisions of § 60.15(f)(1) through (3) of this title.

(u) *Secondary emissions* means emissions which occur as a result of the construction or operation of an existing stationary facility but do not come from the existing stationary facility. Secondary emissions may include, but are not limited to, emissions

from ships or trains coming to or from the existing stationary facility.

(v) *Significant impairment* means, for purposes of section 303, visibility impairment which, in the judgment of the Administrator, interferes with the management, protection, preservation, or enjoyment of the visitor's visual experience of the mandatory Class I Federal area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency and time of the visibility impairment, and how these factors correlate with (1) times of visitor use of the mandatory Class I Federal area, and (2) the frequency and timing of natural conditions that reduce visibility.

(w) *Stationary Source* means any building, structure, facility, or installation which emits or may emit any air pollutant.

(x) *Visibility impairment* means any humanly perceptible change in visibility (visual range, contrast, coloration) from that which would have existed under natural conditions.

(y) *Visibility in any mandatory Class I Federal area* includes any integral vista associated with that area.

§ 51.302 Implementation control strategies.

(a) *Plan Revision Procedures.* (1) Each State identified in section 300(b)(2) must submit, no later than nine months from the date of promulgation of this regulation, an implementation plan revision meeting the requirements of this subpart.

(2)(i) The State, prior to adoption of any implementation plan required by this subpart, must conduct one or more public hearings on such plan in accordance with § 51.4.

(ii) In addition to the requirements in § 51.4, the State must provide written notification of such hearings to each affected Federal Land Manager, and other affected States, and must state where the public can inspect a summary prepared by the Federal Land Managers of their conclusions and recommendations, if any, on the proposed plan.

(3) Submission of plans as required by this subpart must be conducted in accordance with the procedures in § 51.5.

(b) *State and Federal Land Manager Coordination.* (1) The State must identify to the Federal Land Managers, in writing and within 30 days of the date of promulgation of these regulations, the title of the official to which the Federal Land Manager of any mandatory Class I Federal area can submit a recommendation on the implementation of this subpart including, but not limited to:

(i) A list of integral vistas that are to be listed by the State for the purpose of implementing section 304,

(ii) Identification of impairment of visibility in any mandatory Class I Federal area(s), and

(iii) Identification of elements for inclusion in the visibility monitoring strategy required by section 305.

(2) The State must provide opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the plan, with the Federal Land Manager on the proposed SIP revision required by this subpart. This consultation must include the opportunity for the affected Federal Land Managers to discuss their:

(i) Assessment of impairment of visibility in any mandatory Class I Federal area, and

(ii) Recommendations on the development of the long-term strategy.

(3) The plan must provide procedures for continuing consultation between the State and Federal Land Manager on the implementation of the visibility protection program required by this subpart.

(c) *General Plan Requirements.* (1) The affected Federal Land Manager may certify to the State, at any time, that there exists impairment of visibility in any mandatory Class I Federal area.

(2) The plan must contain:

(i) A long-term (10-15 years) strategy as specified in section 305 and section 306, including such emission limitations, schedules

of compliance, and such other measures including schedules for the implementation of the elements of the long-term strategy as may be necessary to make reasonable progress toward the national goal specified in section 300(a).

(ii) An assessment of visibility impairment and a discussion of how each element of the plan relates to the preventing of future or remedying of existing impairment of visibility in any mandatory Class I Federal area within the State.

(iii) Emission limitations representing BART and schedules for compliance with BART for each existing stationary facility identified according to paragraph (c)(4) of this section.

(3) The plan must require each source to maintain control equipment required by this subpart and establish procedures to ensure such control equipment is properly operated and maintained.

(4) For any existing visibility impairment the Federal Land Manager certifies to the State under paragraph (c)(1) of this section, at least 6 months prior to plan submission:

(i) The State must identify and analyze for BART each existing stationary facility which may reasonably be anticipated to cause or contribute to impairment of visibility in any mandatory Class I Federal area where the impairment in the mandatory Class I Federal area is reasonably attributable to that existing stationary facility. The State need not consider any integral vista the Federal Land Manager did not identify pursuant to section 304(b) at least 6 months before plan submission.

(ii) If the State determines that technological or economic limitations on the applicability of measurement methodology to a particular existing stationary facility would make the imposition of an emission standard infeasible it may instead prescribe a design, equipment, work practice, or other operational standard, or combination thereof, to require the application of BART. Such standard, to the degree possible, is to set forth the emission reduction to be achieved by implementation of such design, equipment, work practice or operation, and must provide for compliance by means which achieve equivalent results.

(iii) BART must be determined for fossil-fuel fired generating plants having a total generating capacity in excess of 750 megawatts pursuant to "Guidelines for Determining Best Available Retrofit Technology for Coal-fired Power Plants and Other Existing Stationary Facilities" (1980), which is incorporated by reference, exclusive of appendix E, which was published in the FEDERAL REGISTER on February 6, 1980 (45 FR 8210). It is EPA publication No. 450/3-80-009b and is for sale from the U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. It is also available for inspection at the Office of the Federal Register Information Center, room 8301, 1100 L Street, NW, Washington, DC 20408.

(iv) The plan must require that each existing stationary facility required to install and operate BART do so as expeditiously as practicable but in no case later than five years after plan approve.

(v) The plan must provide for a BART analysis of any existing stationary facility that might cause or contribute to impairment of visibility in any mandatory Class I Federal area identified under this paragraph (c)(4) at such times, as determined by the Administrator, as new technology for control of the pollutant becomes reasonably available if:

(A) The pollutant is emitted by that existing stationary facility,

(B) Controls representing BART for the pollutant have not previously been required under this subpart, and

(C) The impairment of visibility in any mandatory Class I Federal area is reasonably attributable to the emissions of that pollutant.

§ 51.303 Exemptions from control.

(a)(1) Any existing stationary facility subject to the requirement under section 302 to install, operate, and maintain BART may apply to the Administrator for an exemption from that requirement.

(2) An application under this section must include all available documentation relevant to the impact of the source's emissions on

visibility in any mandatory Class I Federal area and a demonstration by the existing stationary facility that it does not or will not, by itself or in combination with other sources, emit any air pollutant which may be reasonably anticipated to cause or contribute to a significant impairment of visibility in any mandatory Class I Federal area.

(b) Any fossil-fuel fired power plant with a total generating capacity of 750 megawatts or more may receive an exemption from BART only if the owner or operator of such power plan demonstrates to the satisfaction of the Administrator that such power plant is located at such a distance from all mandatory Class I Federal areas that such power plant does not or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to significant impairment of visibility in any such mandatory Class I Federal area.

(c) Application under this section 303 must be accompanied by a written concurrence from the State with regulatory authority over the source.

(d) The existing stationary facility must give prior written notice to all affected Federal Land Managers of any application for exemption under this section 303.

(e) The Federal Land Manager may provide an initial recommendation or comment on the disposition of such application. Such recommendation, where provided, must be part of the exemption application. This recommendation is not to be construed as the concurrence required under paragraph (h) of this section.

(f) The Administrator, within 90 days of receipt of an application for exemption from control, will provide notice of receipt of an exemption application and notice of opportunity for public hearing on the application.

(g) After notice and opportunity for public hearing, the Administrator may grant or deny the exemption. For purposes of judicial review, final EPA action on an application for an exemption under this section 303 will not occur until EPA approves or disapproves the State Implementation Plan revision.

(h) An exemption granted by the Administrator under this section 303 will be effective only upon concurrence by all affected Federal Land Managers with the Administrator's determination.

§ 51.304 Identification of integral vistas.

(a) On or before December 31, 1985 the Federal Land Manager may identify any integral vista. The integral vista must be identified according to criteria the Federal Land Manager develops. These criteria must include, but are not limited to, whether the integral vista is important to the visitor's visual experience of the mandatory Class I Federal area. Adoption of criteria must be preceded by reasonable notice and opportunity for public comment on the proposed criteria.

(b) The Federal Land Manager must notify the State of any integral vistas identified under paragraph (a) of this section, and the reasons therefor.

(c) The State must list in its implementation plan any integral vista the Federal Land Manager identifies at least six months prior to plan submission, and must list in its implementation plan at its earliest opportunity,and in no case later than at the time of the periodic review of the SIP required by section 306(c), any integral vista the Federal Land Manager identifies after that time.

(d) The State need not in its implementation plan list any integral vista the identification of which was not made in accordance with the criteria in paragraph (a) of this section. In making this finding, the State must carefully consider the expertise of the Federal Land Manager in making the judgments called for by the criteria for identification. Where the State and the Federal Land Manager disagree on the identification of any integral vista, the State must give the Federal Land Manager an opportunity to consult with the Governor of the State.

§ 51.305 Monitoring.

(a) The State must include in the plan a strategy for evaluating visibility in any mandatory Class I Federal area by visual observation or other appropriate monitoring techniques. Such

strategy must take into account current and anticipated visibility monitoring research, the availability of appropriate monitoring techniques, and such guidance as is provided by the Agency.

(b) The plan must provide for the consideration of available visibility data and must provide a mechanism for its use in decisions required by this subpart.

§ 51.306 Long-term strategy.

(a) (1) Each plan must include a long-term (10-15 years) strategy for making reasonable progress toward the national goal specified in section 300(a). This strategy must cover any existing impairment the Federal Land Manager certifies to the State at least 6 months prior to plan submission, and any integral vista of which the Federal Land Manager notifies the State at least 6 months prior to plan submission.

(2) A long-term strategy must be developed for each mandatory Class I Federal area located within the State and each mandatory Class I Federal area located outside the State which may be affected by sources within the State. This does not preclude the development of a single comprehensive plan for all such areas.

(3) The plan must set forth with reasonable specificity why the long-term strategy is adequate for making reasonable progress toward the national visibility goal, including remedying existing and preventing future impairment.

(b) The State must coordinate its long-term strategy for an area with existing plans and goals, including those provided by the affected Federal Land Managers, that may affect impairment of visibility in any mandatory Class I Federal area.

(c) The plan must provide for periodic review and revision, as appropriate, of the long-term strategy not less frequent than every three years. This review process must include consultation with the appropriate Federal Land Managers, and the State must provide a report to the public and the Administrator on progress toward the national goal. This report must include an assessment of:

(1) The progress achieved in remedying existing impairment of visibility in any mandatory Class I Federal area;

(2) The ability of the long-term strategy to prevent future impairment of visibility in any mandatory Class I Federal area;

(3) Any change in visibility since the last such report, or, in the case of the first report, since plan approval;

(4) Additional measures, including the need for SIP revisions, that may be necessary to assure reasonable progress toward the national visibility goal;

(5) The progress achieved in implementing BART and meeting other schedules set forth in the long-term strategy;

(6) The impact of any exemption granted under section 303;

(7) The need for BART to remedy existing visibility impairment of any integral vista listed in the plan since the last such report, or, in the case of the first report, since plan approval.

(d) The long-term strategy must provide for review of the impacts from any new major stationary source or major modifications on visibility in any mandatory Class I Federal area. This review of major stationary sources or major modifications must be in accordance with section 307, § 51.24, § 51.18 and any other binding guidance provided by the Agency insofar as these provisions pertain to protection of visibility in any mandatory Class I Federal areas.

(e) The State must consider, at a minimum, the following factors during the development of its long-term strategy:

(1) Emission reductions due to ongoing air pollution control programs,

(2) Additional emission limitations and schedules for compliance,

(3) Measures to mitigate the impacts of construction activities,

(4) Source retirement and replacement schedules,

(5) Smoke management techniques for agricultural and forestry management purposes including such plans as currently exist within the State for these purposes, and

(6) Enforceability of emission limitations and control measures.

(f) The plan must discuss the reasons why the above and other reasonable measures considered in the development of the long-term strategy were or were not adopted as part of the long-term strategy.

(g) The State, in developing the long-term strategy, must take into account the effect of new sources, and the costs of compliance, the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any affected existing source and equipment therein.

§ 51.307 New source review.

(a) For purposes of new source review of any new major stationary source or major modification that would be constructed in an area that is designated attainment or unclassified under section 107(d)(1)(D) or (E) of the Clean Air Act, the State plan must, in any review under § 51.24 with respect to visibility protection and analyses, provide for:

(1) Written notification of all affected Federal Land Managers of any proposed new major stationary source or major modification that may affect visibility in any Federal Class I area. Such notification must be made in writing and include a copy of all information relevant to the permit application within 30 days of receipt of and at least 60 days prior to public hearing by the State on the application for permit to construct. Such notification must include an analysis of the anticipated impacts on visibility in any Federal Class I area,

(2) Where the State requires or receives advance notification (e.g. early consultation with the source prior to submission of the application or notification of intent to monitor under § 51.24) of a permit application of a source that may affect visibility the State must notify all affected Federal Land Managers within 30 days of such advance notification, and

(3) Consideration of any analysis performed by the Federal Land Manager, provided within 30 days of the notification and

analysis required by paragraph (a)(1) of this section, that such proposed new major stationary source or major modification may have an adverse impact on visibility in any Federal Class I area. Where the State finds that such an analysis does not demonstrate to the satisfaction of the State that an adverse impact will result in the Federal Class I area, the State must, in the notice of public hearing, either explain its decision or give notice as to where the explanation can be obtained.

(b) The plan shall also provide for the review of any new major stationary source or major modification:

(1) That may have an impact on any integral vista of a mandatory Class I Federal area, if it is identified in accordance with section 304 by the Federal Land Manager at least 12 months before submission of a complete permit application, except where the Federal Land Manager has provided notice and opportunity for public comment on the integral vista in which case the review must include impacts on any integral vista identified at least 6 months prior to submission of a compete permit application, unless the State determines under section 304(d) that the identification was not in accordance with the identification criteria, or

(2) That proposes to locate in an area classified as nonattainment under section 107(d)(1)(A), (B), or (C) of the Clean Air Act that may have an impact on visibility in any mandatory Class I Federal area.

(c) Review of any major stationary source or major modification under paragraph (b) of this section, shall be conducted in accordance with paragraph (a) of this section, and § 51.24(o), (p)(1) through (2), and (q). In conducting such reviews the State must ensure that the source's emissions will be consistent with making reasonable progress toward the national visibility goal referred to in section 300(a). The State may take into account the cost of compliance, the time necessary for compliance, the energy an nonair quality environmental impacts of compliance,and the useful life of the source.

(d) The State may require monitoring of visibility in any Federal Class I area near the proposed new stationary source or major modification for such purposes and by such means as the State deems necessary and appropriate.

CODE OF FEDERAL REGULATIONS

TITLE 40—PROTECTION OF ENVIRONMENT

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

SUBPART D—ARIZONA

§ 52.145 Visibility protection.

(a) The requirements of section 169A of the Clean Air Act are not met, because the plan does not include approvable procedures for protection of visibility in mandatory Class I Federal areas.

(b) Regulations for visibility monitoring and new source review. The provisions of § § 52.26, 52.27 and 52.28, are hereby incorporated and made part of the applicable plan for the State of Arizona.

. . .

40 C.F.R. § 52.26

CODE OF FEDERAL REGULATIONS
TITLE 40—PROTECTION OF ENVIRONMENT
CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY
SUBCHAPTER C—AIR PROGRAMS
PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS
SUBPART A—GENERAL PROVISIONS

§ 52.26 Visibility monitoring strategy.

(a) Plan Disapprovals. The provisions of this section are applicable to any State implementation plan which has been disapproved with respect to visibility monitoring. Specific disapprovals are listed where applicable in Subparts B through DD of this part. The provisions of this section have been incorporated by reference into the applicable implementation plan for various States, as provided in Subparts B through DDD of this part.

(b) Definitions. For the purposes of this section:

(1) "Visibility protection area" means any area listed in 40 CFR 81.401-81.436 (1984).

(2) All other terms shall have the meaning ascribed to them in the Clean Air Act, or in the protection of visibility program (40 CFR 51.301), all as in effect on July 12, 1985.

(c) Monitoring Requirements. (1) The Administrator, in cooperation with the appropriate Federal land manager, shall monitor visibility within each visibility protection area in any State whose State implementation plan is subject to a disapproval for failure to satisfy 40 CFR 51.305 (1984).

(2) The Administrator, in monitoring visibility within each such area, shall determine both background visibility conditions and reasonably attributable visibility impairment caused by a source or small group of sources for that area. The extent and the form of monitoring shall be sufficient for use in determining the potential

effects of a new stationary source on visibility in the area, the stationary source or sources that are causing any visibility impairment, and progress toward remedying that impairment.

(3) The Administrator shall use the following as appropriate to monitor visibility within each such area: (i) photographic cameras, (ii) fine particulate matter samplers, (iii) teleradiometers (iv) nephelometers, (v) human observation, or (vi) other appropriate technology.

(4) The Administrator, in cooperation with the Federal land managers, shall prepare monitoring plans that describe, to the maximum extent practicable, the methods and instruments of data collection, the monitoring locations and frequencies, the implementation schedules, the quality assurance procedures, and the methods of data reporting that the Administrator will use for each area. The Administrator shall make these plans available to the public.

(5) The Administrator shall establish a central repository of monitoring data that includes any data on background visibility conditions and reasonably attributable impairment that the Administrator collects under this section and that the Federal land manager may collect or may have collected independently. These data shall be available to any person, subject to reasonable charges for copying.

(d) Monitoring Plan Revision. (1) The Administrator shall review the monitoring plan annually for each visibility protection area, revise it as necessary, and include an assessment of changes to visibility conditions since the last review. The Administrator shall make all plan revisions available to the public.

* * *

42 U.S.C. § 7410. **State implementation plans for national primary and secondary ambient air quality standards [CAA § 110]**

(a) **Adoption of plan for State; submission to Administrator; content of plan; revision; indirect source review program; supplemental or intermittent control systems**

(1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 7409 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance, and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.

(2) Each implementation plan submitted by a State under this chapter shall be adopted by the State after reasonable notice and public hearing. Each such plan shall—

(A) include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for

compliance, as may be necessary or appropriate to meet the applicable requirements of this chapter;

(B) provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to—

(i) monitor, compile, and analyze data on ambient air quality, and

(ii) upon request, make such data available to the Administrator;

(C) include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;

(D) contain adequate provisions—

(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will—

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,

(ii) insuring compliance with the applicable requirements of section 7426 and 7415 of this title (relating to interstate and international pollution abatement);

(E) provide (i) necessary assurances that the State (or, except where the Administrator deems inappropriate, the

general purpose local government or governments, or a regional agency designated by the State or general purpose local governments for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii) requirements that the State comply with the requirements respecting State boards under section 7428 of this title, and (iii) necessary assurances that, where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;

(F) require, as may be prescribed by the Administrator—

(i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources,

(ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and

(iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this chapter, which reports shall be available at reasonable times for public inspection;

(G) provide for authority comparable to that in section 7603 of this title and adequate contingency plans to implement such authority;

(H) provide for revision of such plan—

(i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the

availability of improved or more expeditious methods of attaining such standard, and

(ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this chapter;

(I) in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);

(J) meet the applicable requirements of section 7421 of this title (relating to consultation), section 7427 of this title (relating to public notification), and part C (relating to prevention of significant deterioration of air quality and visibility protection);

(K) provide for—

(i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and

(ii) the submission, upon request, of data related to such air quality modeling to the Administrator;

(L) require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this chapter, a fee sufficient to cover—

(i) the reasonable costs of reviewing and acting upon any application for such a permit, and

(ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and

enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action),

until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under subchapter V of this chapter; and

(M) provide for consultation and participation by local political subdivisions affected by the plan.

(3)(A) Repealed. Pub.L. 101-549, Title I, § 101(d)(1), Nov. 15, 1990, 104 Stat. 2409.

(B) As soon as practicable, the Administrator shall, consistent with the purposes of this chapter and the Energy Supply and Environmental Coordination Act of 1974 [15 U.S.C.A. § 791 et seq.], review each State's applicable implementation plans and report to the State on whether such plans can be revised in relation to fuel burning stationary sources (or persons supplying fuel to such sources) without interfering with the attainment and maintenance of any national ambient air quality standard within the period permitted in this section. If the Administrator determines that any such plan can be revised, he shall notify the State that a plan revision may be submitted by the State. Any plan revision which is submitted by the State shall, after public notice and opportunity for public hearing, be approved by the Administrator if the revision relates only to fuel burning stationary sources (or persons supplying fuel to such sources), and the plan as revised complies with paragraph (2) of this subsection. The Administrator shall approve or disapprove any revision no later than three months after its submission.

(C) Neither the State, in the case of a plan (or portion thereof) approved under this subsection, nor the Administrator, in the case of a plan (or portion thereof) promulgated under subsection (c) of this section, shall be required to revise an applicable implementation plan because one or more exemptions under section 7418 of this title

(relating to Federal facilities), enforcement orders under section 7413(d) of this title, suspensions under subsection (f) or (g) of this section (relating to temporary energy or economic authority), orders under section 7419 of this title (relating to primary nonferrous smelters), or extensions of compliance in decrees entered under section 7413(e) of this title (relating to iron- and steel-producing operations) have been granted, if such plan would have met the requirements of this section if no such exemptions, orders, or extensions had been granted.

(D) Repealed. Pub.L. 101-549, Title I, § 101(d)(1), Nov. 15, 1990, 104 Stat. 2409.

(4) Repealed. Pub.L. 101-549, Title I, § 101(d)(2), Nov. 15, 1990, 104 Stat. 2409.

(5)(A)(i) Any State may include in a State implementation plan, but the Administrator may not require as a condition of approval of such plan under this section, any indirect source review program. The Administrator may approve and enforce, as part of an applicable implementation plan, an indirect source review program which the State chooses to adopt and submit as part of its plan.

(ii) Except as provided in subparagraph (B), no plan promulgated by the Administrator shall include any indirect source review program for any air quality control region, or portion thereof.

(iii) Any State may revise an applicable implementation plan approved under this subsection to suspend or revoke any such program included in such plan, provided that such plan meets the requirements of this section.

(B) The Administrator shall have the authority to promulgate, implement and enforce regulations under subsection (c) of this section respecting indirect source review programs which apply only to federally assisted highways, airports, and other major federally assisted indirect sources and federally owned or operated indirect sources.

(C) For purposes of this paragraph, the term "indirect source" means a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution. Such term includes parking lots, parking garages, and other facilities subject to any measure for management of parking supply (within the meaning of subsection (c)(2)(D)(ii) of this section), including regulation of existing off-street parking but such term does not include new or existing on-street parking. Direct emissions sources or facilities at, within, or associated with, any indirect source shall not be deemed indirect sources for the purpose of this paragraph.

(D) For purposes of this paragraph the term "indirect source review program" means the facility-by-facility review of indirect sources of air pollution, including such measures as are necessary to assure, or assist in assuring, that a new or modified indirect source will not attract mobile sources of air pollution, the emissions from which would cause or contribute to air pollution concentrations—

(i) exceeding any national primary ambient air quality standard for a mobile source-related air pollutant after the primary standard attainment date, or

(ii) preventing maintenance of any such standard after such date.

(E) For purposes of this paragraph and paragraph (2)(B), the term "transportation control measure" does not include any measure which is an indirect source review program".

(6) No state plan shall be treated as meeting the requirements of this section unless such plan provides that in the case of any source which uses a supplemental, or intermittent control system for purposes of meeting the requirements of an order under section 7413(d) of this title or section 7419 of this title (relating to primary nonferrous smelter orders), the owner or operator of such source may not temporarily reduce the pay of any employee by reason of the use of such supplemental or intermittent or other dispersion dependent control system.

(b) Extension of period for submission of plans

The Administrator may, wherever he determines necessary, extend the period for submission of any plan or portion thereof which implements a national secondary ambient air quality standard for a period not to exceed 18 months from the date otherwise required for submission of such plan.

(c) Preparation and publication by Administrator of proposed regulations setting forth implementation plan; parking surcharge; plan implementation

(1) The Administrator shall promulgate a Federal implementation plan at any time within 2 years after the Administrator—

(A) finds that a State has failed to make a required submission or finds that the plan or plan revision submitted by the State does not satisfy the minimum criteria established under section 7410(k)(1)(A) of this title, or

(B) disapproves a State implementation plan submission in whole or in part,

unless the State corrects the deficiency, and the Administrator approves the plan or plan revision, before the Administrator promulgates such Federal implementation plan.

(2)(A) Repealed. Pub.L. 101-549, Title I, § 101(d)(3)(A), Nov. 15, 1990, 104 Stat. 2409.

(B) No parking surcharge regulation may be required by the Administrator under paragraph (1) of this subsection as a part of an applicable implementation plan. All parking surcharge regulations previously required by the Administrator shall be void upon June 22, 1974. This subparagraph shall not prevent the Administrator from approving parking surcharges if they are adopted and submitted by a State as part of an applicable implementation plan. The Administrator may not condition approval of any implementation plan submitted by a State on such plan's including a parking surcharge regulation.

(C) Repealed. Pub.L. 101-549, Title I, § 101(d)(3)(B), Nov. 15, 1990, 104 Stat. 2409.

(D) For purposes of this paragraph—

(i) The term "parking surcharge regulation" means a regulation imposing or requiring the imposition of any tax, surcharge, fee, or other charge on parking spaces, or any other area used for the temporary storage of motor vehicles.

(ii) The term "management of parking supply" shall include any requirement providing that any new facility containing a given number of parking spaces shall receive a permit or other prior approval, issuance of which is to be conditioned on air quality considerations.

(iii) The term "preferential bus/carpool lane" shall include any requirement for the setting aside of one or more lanes of a street or highway on a permanent or temporary basis for the exclusive use of buses or carpools, or both.

(E) No standard, plan or requirement, relating to management of parking supply or preferential bus/carpool lanes shall be promulgated after June 22, 1974, by the Administrator pursuant to this section, unless such promulgation has been subjected to at least one public hearing which has been held in the area affected and for which reasonable notice has been given in such area. If substantial changes are made following public hearings, one or more additional hearings shall be held in such area after such notice.

(3) Upon application of the chief executive officer of any general purpose unit of local government, if the Administrator determines that such unit has adequate authority under State or local law, the Administrator may delegate to such unit the authority to implement and enforce within the jurisdiction of such unit any part of a plan promulgated under this subsection. Nothing in this paragraph shall prevent the Administrator from implementing or enforcing any applicable provision of a plan promulgated under this subsection.

(4) Repealed. Pub.L. 101-549, Title I, § 101(d)(3)(C), Nov. 15, 1990, 104 Stat. 2409.

(5)(A) Any measure in an applicable implementation plan which requires a toll or other charge for the use of a bridge located entirely within one city shall be eliminated from such plan by the Administrator upon application by the Governor of the State, which application shall include a certification by the Governor that he will revise such plan in accordance with subparagraph (B).

(B) In the case of any applicable implementation plan with respect to which a measure has been eliminated under subparagraph (A), such plan shall, not later than one year after August 7, 1977, be revised to include comprehensive measures to:

(i) establish, expand, or improve public transportation measures to meet basic transportation needs, as expeditiously as is practicable; and

(ii) implement transportation control measures necessary to attain and maintain national ambient air quality standards,

and such revised plan shall, for the purpose of implementing such comprehensive public transportation measures, include requirements to use (insofar as is necessary) Federal grants, State or local funds, or any combination of such grants and funds as may be consistent with the terms of the of the legislation providing such grants and funds. Such measures shall, as a substitute for the tolls or charges eliminated under subparagraph (A), provide for emissions reductions equivalent to the reductions which may reasonably be expected to be achieved through the use of the tolls or charges eliminated.

(C) Any revision of an implementation plan for purposes of meeting the requirements of subparagraph (B) shall be submitted in coordination with any plan revision required under part D of this subchapter.

(d), (e) Repealed. Pub.L. 101-549, Title I, § 101(d),(e), Nov. 15, 1990, 104 Stat. 2409.

(f) National or regional energy emergencies; determination by President

(1) Upon application by the owner or operator of a fuel burning stationary source, and after notice and opportunity for public hearing, the Governor of the State in which such source is located may petition the President to determine that a national or regional energy emergency exists of such severity that—

(A) a temporary suspension of any part of the applicable implementation plan may be necessary, and

(B) other means of responding to the energy emergency may be inadequate.

Such determination shall not be delegable by the President to any other person. If the President determines that a national or regional energy emergency of such severity exists, a temporary emergency suspension of any part of an applicable implementation plan or any requirement under section 7651j of this title (concerning excess emissions penalties or offsets) adopted by the State may be issued by the Governor of any State covered by the President's determination under the condition specified in paragraph (2) and may take effect immediately.

(2) A temporary emergency suspension under this subsection shall be issued to a source only if the Governor of such State finds that—

(A) there exists in the vicinity of such source a temporary energy emergency involving high levels of unemployment or loss of necessary energy supplies for residential dwellings; and

(B) such unemployment or loss can be totally or partially alleviated by such emergency suspension.

Not more than one such suspension may be issued for any source on the basis of the same set of circumstances or on the basis of the same emergency.

(3) A temporary emergency suspension issued by a Governor under this subsection shall remain in effect for a maximum of four months or such lesser period as may be specified in a disapproval order of the Administrator, if any. The Administrator may

disapprove such suspension if he determines that it does not meet the requirements of paragraph (2).

(4) This subsection shall not apply in the case of a plan provision or requirement promulgated by the Administrator under subsection (c) of this section, but in any such case the President may grant a temporary emergency suspension for a four month period of any such provision or requirement if he makes the determinations and findings specified in paragraphs (1) and (2).

(5) The Governor may include in any temporary emergency suspension issued under this subsection a provision delaying for a period identical to the period of such suspension any compliance schedule (or increment of progress) to which such source is subject under section 1857c-10 of this title, as in effect before August 7, 1977, or section 7413(d) of this title, upon a finding that such source is unable to comply with such schedule (or increment) solely because of the conditions on the basis of which a suspension was issued under this subsection.

(g) Governor's authority to issue temporary emergency suspensions

(1) In the case of any State which has adopted and submitted to the Administrator a proposed plan revision which the State determines—

(A) meets the requirements of this section, and

(B) is necessary (i) to prevent the closing for one year or more of any source of air pollution, and (ii) to prevent substantial increases in unemployment which would result from such closing, and

which the Administrator has not approved or disapproved under this section within 12 months of submission of the proposed plan revision, the Governor may issue a temporary emergency suspension of the part of the applicable implementation plan for such State which is proposed to be revised with respect to such source. The determination under subparagraph (B) may not be made with respect

to a source which would close without regard to whether or not the proposed plan revision is approved.

(2) A temporary emergency suspension issued by a Governor under this subsection shall remain in effect for a maximum of four months or such lesser period as may be specified in a disapproval order of the Administrator. The Administrator may disapprove such suspension if he determines that it does not meet the requirements of this subsection.

(3) The Governor may include in any temporary emergency suspension issued under this subsection a provision delaying for a period identical to the period of such suspension any compliance schedule (or increment of progress) to which such source is subject under section 1857c-10 of this title as in effect before August 7, 1977, or under section 7413(d) of this title upon a finding that such source is unable to comply with such schedule (or increment) solely because of the conditions on the basis of which a suspension was issued under this subsection.

(h) Annual publication of comprehensive document for each State setting forth requirements of applicable implementation plan

(1) Not later than 5 years after November 15, 1990, and every 3 years thereafter, the Administrator shall assemble and publish a comprehensive document for each State setting forth all requirements of the applicable implementation plan for such State and shall publish notice in the Federal Register of the availability of such documents.

(2) The Administrator may promulgate such regulations as may be reasonably necessary to carry out the purpose of this subsection.

(i) Modification of requirements prohibited

Except for a primary nonferrous smelter order under section 7419 of this title, a suspension under subsection (f) or (g) of this section (relating to emergency suspensions), an exemption under section 7418 of this title (relating to certain Federal facilities), an

order under section 7413(d) of this title (relating to compliance orders), a plan promulgation under subsection (c) of this section, or a plan revision under subsection (a)(3) of this section; no order, suspension, plan revision, or other action modifying any requirement of an applicable implementation plan may be taken with respect to any stationary source by the State or by the Administrator.

(j) Technological systems of continuous emission reduction on new or modified stationary sources; compliance with performance standards

As a condition for issuance of any permit required under this subchapter, the owner or operator of each new or modified stationary source which is required to obtain such a permit must show to the satisfaction of the permitting authority that the technological system of continuous emission reduction which is to be used will enable such source to comply with the standards of performance which are to apply to such source and that the construction or modification and operation of such source will be in compliance with all other requirements of this chapter.

(k) Environmental Protection Agency action on plan submissions

(1) Completeness of plan submissions

(A) Completeness criteria

Within 9 months after November 15, 1990, the Administrator shall promulgate minimum criteria that any plan submission must meet before the Administrator is required to act on such submission under this subsection. The criteria shall be limited to the information necessary to enable the Administrator to determine whether the plan submission complies with the provisions of this chapter.

(B) Completeness finding

Within 60 days of the Administrator's receipt of a plan or plan revision, but no later than 6 months after the

date, if any, by which a State is required to submit the plan or revision, the Administrator shall determine whether the minimum criteria established pursuant to subparagraph (A) have been met. Any plan or plan revision that a State submits to the Administrator, and that has not been determined by the Administrator (by the date 6 months after receipt of the submission) to have failed to meet the minimum criteria established pursuant to subparagraph (A), shall on that date be deemed by operation of law to meet such minimum criteria.

(C) Effect of finding of incompleteness

Where the Administrator determines that a plan submission (or part thereof) does not meet the minimum criteria established pursuant to subparagraph (A), the State shall be treated as not having made the submission (or, in the Administrator's discretion, part thereof).

(2) Deadline for action

Wherein 12 months of a determination by the Administrator (or a determination deemed by operation of law) under paragraph (1) that a State has submitted a plan or plan revision (or, in the Administrator's discretion, part thereof) that meets the minimum criteria established pursuant to paragraph (1), if applicable (or, if those criteria are not applicable, within 12 months of submission of the plan or revision), the Administrator shall act on the submission in accordance with paragraph (3).

(3) Full and partial approval and disapproval

In the case of any submittal on which the Administrator is required to act under paragraph (2), the Administrator shall approve such submittal as a whole if it meets all of the applicable requirements of this chapter. If a portion of the plan revision meets all the applicable requirements of this chapter, the Administrator may approve the plan revision in part and disapprove the plan revision in part. The plan revision shall not be treated as meeting the requirements of this chapter until the Administrator approves the

entire plan revision as complying with the applicable requirements of this chapter.

(4) Conditional approval

The Administrator may approve a plan revision based on a commitment of the State to adopt specific enforceable measures by a date certain, but not later than 1 year after the date of approval of the plan revision. Any such conditional approval shall be treated as a disapproval if the State fails to comply with such commitment.

(5) Calls for plan revisions

Whenever the Administrator finds that the applicable implementation plan for any area is substantially inadequate to attain or maintain the relevant national ambient air quality standard, to mitigate adequately the interstate pollutant transport described in section 7506a or section 7511c of this title, or to otherwise comply with any requirement of this chapter, the Administrator shall require the State to revise the plan as necessary to correct such inadequacies. The Administrator shall notify the State of the inadequacies, and may establish reasonable deadlines (not to exceed 18 months after the date of such notice) for the submission of such plan revisions. Such findings and notice shall be public. Any finding under this paragraph shall, to the extent the Administrator deems appropriate, subject the State to the requirements of this chapter to which the State was subject when it developed and submitted the plan for which such finding was made, except that the Administrator may adjust any dates applicable under such requirements as appropriate (except that the Administrator may not adjust any attainment date prescribed under part D, unless such date has elapsed).

(6) Corrections

Whenever the Administrator determines that the Administrator's action approving, disapproving, or promulgating any plan or plan revision (or part thereof), area designation, redesignation, classification, or reclassification was in error, the Administrator may in the same manner as the approval, disapproval, or promulgation revise such action as appropriate without requiring

any further submission from the State. Such determination and the basis thereof shall be provided to the State and public.

(l) Plan revisions

Each revision to an implementation plan submitted by a State under this chapter shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 7501 of this title), or any other applicable requirement of this chapter.

(m)Sanctions

The Administrator may apply any of the sanctions listed in section 7509(b) of this title at any time (or at any time after) the Administrator makes a finding, disapproval, or determination under paragraphs (1) through (4), respectively, of section 7509(a) of this title in relation to any plan or plan item (as that term is defined by the Administrator) required under this chapter, with respect to any portion of the State the Administrator determines reasonable and appropriate, for the purpose of ensuring that the requirements of this chapter relating to such plan or plan item are met. The Administrator shall, by rule, establish criteria for exercising his authority under the previous sentence with respect to any deficiency referred to in section 7509(a) of this title to ensure that, during the 24-month period following the finding, disapproval, or determination referred to in section 7509(a) of this title, such sanctions are not applied on a statewide basis where one or more political subdivisions covered by the applicable implementation plan are principally responsible for such deficiency.

(n) Savings clauses

(1) Existing plan provisions

Any provision of any applicable implementation plan that was approved or promulgated by the Administrator pursuant to this section as in effect before November 15, 1990, shall remain in effect as part of such applicable implementation plan, except to the

extent that a revision to such provision is approved or promulgated by the Administrator pursuant to this chapter.

(2) Attainment dates

For any area not designated non-attainment, any plan or plan revision submitted or required to be submitted by a State—

(A) in response to the promulgation or revision of a national primary ambient air quality standard in effect on November 15, 1990, or

(B) in response to a finding of substantial inadequacy under subsection (a)(2) of this section (as in effect immediately before November 15, 1990),

shall provide for attainment of the national primary ambient air quality standards within 3 years of November 15, 1990, or within 5 years of issuance of such finding of substantial inadequacy, whichever is later.

(3) Retention of construction moratorium in certain areas

In the case of an area to which, immediately before November 15, 1990, the prohibition on construction or modification of major stationary sources prescribed in subsection (a)(2)(I) of this section (as in effect immediately before November 15, 1990) applied by virtue of a finding of the Administrator that the State containing such area had not submitted an implementation plan meeting the requirements of section 7502(b)(6) (relating to establishment of a permit program) (as in effect immediately before November 15, 1990) or 7502(a)(1) of this title (to the extent such requirements relate to provision for attainment of the primary national ambient air quality standard for sulfur oxides by December 31, 1982) as in effect immediately before November 15, 1990, no major stationary source of the relevant air pollutant or pollutants shall be constructed or modified in such area until the Administrator finds that the

plan for such area meets the applicable requirements of section 7502(c)(5) of this title (relating to permit programs) or subpart 5 of part D (relating to attainment of the primary national ambient air quality standard for sulfur dioxide), respectively.

(o) Indian tribes

If an Indian tribe submits an implementation plan to the Administrator pursuant to section 7601(d) of this title, the plan shall be reviewed in accordance with the provisions for review set forth in this section for State plans, except as otherwise provided by regulation promulgated pursuant to section 7601(d)(2) of this title. When such plan becomes effective in accordance with the regulations promulgated under section 7601(d) of this title, the plan shall become applicable to all areas (except as expressly provided otherwise in the plan) located within the exterior boundaries of the reservation, notwithstanding the issuance of any patent and including rights-of-way running through the reservation.

(p) Reports

Any State shall submit, according to such schedule as the Administrator may prescribe, such reports as the Administrator may require relating to emission reductions, vehicle miles traveled, congestion levels, and any other information the Administrator may deem necessary to assess the development effectiveness, need for revision, or implementation of any plan or plan revision required under this chapter.

(July 14, 1955, ch. 369, title I, § 110, as added Dec. 31, 1970, Pub.L. 91-604, § 4(a), 84 Stat. 1680, and amended June 22, 1974, Pub.L. 93-319, § 4, 88 Stat. 256; S.Res. 4, Feb. 4, 1977; Aug. 4, 1977, Pub.L. 95-91, title III, § 301(a), title VII, § 703, 91 Stat. 577, 606; Aug. 7, 1977, Pub.L. 95-95, title I, §§ 107, 108, 91 Stat. 691, 693; Nov. 16, 1977, Pub.L. 95-190, § 14(a)(1)-(6), 91 Stat. 1399; July 17, 1981, Pub.L. 97-23, § 3, 95 Stat. 142; Nov. 15, 1990, Pub.L. 101-549, title I, §§ 101(b)-(d), 102(h), 107(c), 108(d), title IV, § 412, 104 Stat. 2404-2408, 2422, 2464, 2466, 2634.)

References in Text

"Section 1857c-10 of this title, as in effect before August 7, 1977", referred to in subsecs. (f)(5) and (g)(3) was, in the original, "section 119, as in effect before the date of the enactment of this paragraph", meaning section 119 of Act July 14, 1955, c.360, Title I, as added June 22, 1974, Pub.L. 93-319, § 3, 88 Stat. 248, (which was classified to section 1857c-10 of this title) as in effect prior to the enactment of subsecs. (f)(5) and (g)(3) of this section by Pub.L. 95-95, § 107, Aug. 7, 1977, 91 Stat. 691, effective Aug. 7, 1977. Section 112(b)(1) of Pub.L. 95-95 repealed section 119 of Act July 14, 1955, c.360, Title I, as added by Pub.L. 93-319, and provided that all references to such section 119 in any subsequent enactment which supersedes Pub.L. 93-319 shall be construed to refer to section 113(d) of the Clean Air Act and to paragraph (5) thereof in particular which is classified to section 7413(d)(5) of this title. Section 117(b) of Pub.L. 95-95 added a new section 119 of Act July 14, 1955, which is classified to section 7419 of this title.

Effective Date of 1990 Amendment

Amendment by Pub.L. 101-549 effective Nov. 15, 1990, except as otherwise provided, see section 711(b) of Pub.L.101-549, set out as a note under section 7401 of this title.

Savings Provisions

Suits, actions or proceedings commenced under this chapter as in effect prior to Nov. 15, 1990, not to abate by reason of the taking effect of amendments by Pub.L. 101-549, except as otherwise provided for, see section 711(a) of Pub.L. 101-549, set out as a note under section 7401 of this title.

Cross References

Documentation includable in petition to President to exercise authorities pursuant to section 7425 of this title with respect to major fuel burning stationary source to support finding of significant local or regional economic disruption or unemployment, see section 6215 of this title.

Federally permitted release defined to include emissions into air subject to permit or control regulation under state implementation plan submitted in accordance with this section for purposes of Comprehensive Environmental Response, Compensation, and Liability Act of 1980, see section 9601 of this title.

Permit authorizing increased uses of petroleum by existing power-plants, necessity of certification that powerplant cannot comply with requirements of implementation plan, see section 8375 of this title.

Suspension of emission limitations or other requirements of applicable implementation plans required by emergency prohibition on use of natural gas or petroleum to be issued in accordance with subsec. (f) of this section, see section 8374 of this title.

Code of Federal Regulations

Environmental Protection Agency,

Ambient air quality surveillance, see 40 CFR 58.1 et seq.

Emission standards for hazardous pollutants, see 40 CFR 61.01 et seq.

Implementation plans, generally, see 40 CFR 51.40 et seq.

Implementation plans, requirements concerning, see 40 CFR 51.1 et seq.

National primary and secondary ambient air quality standards, see 40 CFR 50.1 et seq.

New stationary sources, performance standards for, see 40 CFR 60.1 et seq.

Primary nonferrous smelter orders, see 40 CFR 57.101 et seq.

West's Federal Practice Manual

Air quality legislation, see § 4384.5.

Library References

Health and Environment *25.6(1) et seq., 28.

States *4.19.

C.J.S. Health and Environment § 91 et seq.

C.J.S. States § 28.

United States Supreme Court

Approval of plan, economic and technological feasibility, see Union Elec. Co. v. Environmental Protection Agency, 1976, 96 S.Ct. 2518, 427 U.S. 246, 49 L.Ed.2d 474.

Extension of time for revision of plan, see Train v. Natural Resources Defense Council, Inc., 1975, 95 S.Ct. 1470, 421 U.S. 60, 43 L.Ed.2d 731.

42 U.S.C. § 7491. Visibility protection for Federal class I areas [CAA § 169A]

(a) Impairment of visibility; list of areas: study and report

(1) Congress hereby declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.

(2) Not later than six months after August 7, 1977, the Secretary of the Interior in consultation with other Federal land managers shall review all mandatory class I Federal areas and identify those where visibility is an important value of the area. From time to time the Secretary of the Interior may revise such identifications. Not later than one year after August 7, 1977, the Administrator shall, after consultation with the Secretary of the Interior, promulgate a list of mandatory class I Federal areas in which he determines visibility is an important value.

(3) Not later than eighteen months after August 7, 1977, the Administrator shall complete a study and report to Congress on available methods for implementing the national goal set forth in paragraph (1). Such report shall include recommendations for—

(A) methods for identifying, characterizing, determining, quantifying, and measuring visibility impairment in Federal areas referred to in paragraph (1), and

(B) modeling techniques (or other methods) for determining the extent to which manmade air pollution may reasonably be anticipated to cause or contribute to such impairment, and

(C) methods for preventing and remedying such manmade air pollution and resulting visibility impairment.

Such report shall also identify the classes or categories of sources and the types of air pollutants which, alone or in conjunction with other sources or pollutants, may reasonably be anticipate to cause or contribute significantly to impairment of visibility.

(4) Not later than twenty-four months after August 7, 1977, and after notice and public hearing, the Administrator shall promulgate regulations to assure (A) reasonable progress toward meeting the national goal specified in paragraph (1), and (B) compliance with the requirements of this section.

(b) Regulations

Regulations under subsection (a)(4) of this section shall—

(1) provide guidelines to the States, taking into account the recommendations under subsection (a)(3) of this section on appropriate techniques and methods for implementing this section (as provided in subparagraphs (A) through (C) of such subsection (a)(3), and

(2) require each applicable implementation plan for a State in which any area listed by the Administrator under subsection (a)(2) of this section is located (or for a State the emissions from which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area) to contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal specified in subsection (a) of this section, including—

(A) except as otherwise provided pursuant to subsection (c) of this section, a requirement that each major stationary source which is in existence on August 7, 1977, but which has not been in operation for more than fifteen years as of such date, and which, as determined by the State (or the Administrator in the case of a plan promulgated under section 7410(c) of this title) emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area, shall procure, install, and operate, as expeditiously as practicable (and maintain thereafter) the best available retrofit technology, as determined by the State (or the Administrator in the case of a plan promulgated under section 7410(c) of this title) for controlling emissions from such source for the purpose of eliminating or reducing any such impairment, and

(B) a long-term (ten to fifteen years) strategy for making reasonable progress toward meeting the national goal specified in subsection (a) of this section.

In the case of a fossil-fuel fired generating powerplant having a total generating capacity in excess of 750 megawatts, the emission limitations required under this paragraph shall be determined pursuant to guidelines, promulgated by the Administrator under paragraph (1).

(c) Exemptions

(1) The Administrator may, by rule, after notice and opportunity for public hearing, exempt any major stationary source form the requirement of subsection (b)(2)(A) of this section, upon his determination that such source does not or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to a significant impairment of visibility in any mandatory class I Federal area.

(2) Paragraph (1) of this subsection shall not be applicable to any fossil-fuel fired powerplant with total design capacity of 750 megawatts or more, unless the owner or operator of any such plant demonstrates to the satisfaction of the Administrator that such powerplant is located at such distance from all areas listed by the Administrator under subsection (a)(2) of this section that such powerplant does not or will not, by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipate to cause or contribute to significant impairment of visibility in any such area.

(3) An exemption under this subsection shall be effective only upon concurrence by the appropriate Federal land manager or managers with the Administrator's determination under this subsection.

(d) Consultations with appropriate Federal land managers

Before holding the public hearing on the proposed revision of an applicable implementation plan to meet the requirements of this section, the State (or the Administrator in the case of a plan promulgated under section 7410(c) of this title) shall consult in person with the appropriate Federal land manager or managers and shall include a summary of the conclusions and recommendations of the Federal land managers in the notice to the public.

(e) Buffer zones

In promulgating regulations under this section, the Administrator shall not require the use of any automatic or uniform buffer zone or zones.

(f) Nondiscretionary duty

For purposes of section 7604(a)(2) of this title, the meeting of the national goal specified in subsection (a)(1) of this section by any specific date or dates shall not be considered a "nondiscretionary duty" of the Administrator.

(g) Definitions

For the purpose of this section—

(1) in determining reasonable progress there shall be taken into consideration the costs of compliance, the time necessary for compliance, and the energy and nonair quality environmental impacts of compliance, and the remaining useful life of any existing source subject to such requirements;

(2) in determining best available retrofit technology the State (or the Administrator in determining emission limitations which reflect such technology) shall take into consideration the costs of compliance, the energy and nonair quality environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology;

(3) the term "manmade air pollution" means air pollution which results directly or indirectly from human activities;

(4) the term "as expeditiously as practicable" means as expeditiously as practicable but in no event later than five years after the date of approval of a plan revision under this section (or the date of promulgation of such plan revision in the case of action by the Administrator under section 7410(c) of this title for purposes of this section);

(5) the term "mandatory class I Federal areas" means Federal areas which may not be designated as other than class I under this part;

(6) the terms "visibility impairment" and "impairment of visibility" shall include reduction in visual range and atmospheric discoloration; and

(7) the term "major stationary source" means the following types of stationary sources with the potential to emit 250 tons or more of any pollutant: fossil-fuel fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (thermal dryers), kraft pulp mills, Portland Cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators[1] capable of charging

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[1]So in original. Probably should be "incinerators".

more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production facilities, chemical process plants, fossil-fuel boilers of more than 250 million British thermal units per hour heat input, petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels, taconite ore processing facilities, glass fiber processing plants, charcoal production facilities.

(July 14, 1955, ch. 360, title I, § 169A, as added Aug. 7, 1977, Pub.L. 95-95, title I, § 128, 91 Stat. 742.)

Effective Date

Section 406(d) of Title IV of Pub.L. 95-95, Aug. 7, 1977, 91 Stat. 796, provided that, except as otherwise expressly provided, the amendments made by that Act [which enacted this subpart] were effective on the date of enactment [Aug. 7, 1977].

Code of Federal Regulations

Emission standards for hazardous pollutants, see 40 CFR 61.01 et seq.

New stationary sources, performance standards for, see 40 CFR 60.1 et seq.

Library References

Health and Environment [key]25.6(3).

C.J.S. Health and Environment § 92.

42 U.S.C. § 7607. Administrative proceedings and judicial review [CAA § 307]

(a) Administrative subpenas (*sic*); confidentiality; witnesses

In connection with any determination under section 7410(f), or for purposes of obtaining information under section 7521(b)(4) or 7545(c)(3) of this title, any investigation, monitoring, reporting requirement, entry, compliance inspection, or administrative enforcement proceeding under this chapter (including but not limited to section 7413, section 7414, section 7420, section 7424, section 7477, section 7524, section 7525, section 7542, section 7603 or section 7606 of this title), the Administrator may issue subpenas (*sic*) for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and he may administer oaths. Except for emission data, upon a showing satisfactory to the Administrator by such owner or operator that such papers, books, documents, or information or particular part thereof, if made public, would divulge trade secrets or secret processes of such owner or operator, the Administrator shall consider such record, report, or information or particular portion thereof confidential in accordance with the purposes of section 1905 of title 18, except that such paper, book, document, or information may be disclosed to other officers, employees, or authorized representatives of the United States concerned with carrying out this chapter, to persons carrying out the National Academy of Sciences' study and investigation provided for in section 7521(c) of this title, or when relevant in any proceeding under this chapter. Witnesses summoned shall be paid the same fees and mileage that are paid witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpena (*sic*) served upon any person under this subparagraph, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Administrator to appear and

produce papers, books, and documents before the Administrator, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

(b) Judicial review

(1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard or requirement under section 7412 of this title, any standard of performance or requirement under section 7411 of this title, any standard under section 7521 of this title (other than a standard required to be prescribed under section 7521(b)(1) of this title), any determination under section 7521(b)(5) of this title, any control or prohibition under section 7545 of this title, any standard under section 7571 of this title, any rule issued under section 7413, 7419, or under section 7420 of this title, or any other nationally applicable regulations promulgated, or final action taken, by the Administrator under this chapter may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under section 7410 of this title or Section 7411(d) of this title, any order under section 7411(j) of this title, under section 7412 of this title, under section 7419 of this title, or under section 7420 of this title, or his action under section 1857c-10(c)(2)(A), (B), or (C) of this title (as in effect before August 7, 1977) or under regulations thereunder, or revising regulations for enhanced monitoring and compliance certification programs under section 7414(a)(3) of this title, or any other final action of the Administrator under this chapter (including any denial or disapproval by the Administrator under subchapter I of this chapter) which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. Notwithstanding the preceding sentence a petition for review of any action referred to in such sentence may be filed only in the United States Court of Appeals for the District of Columbia if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such

action is based on such determination. Any petition for review under this subsection shall be filed within sixty days from the date notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise. The filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action for purposes of judicial review nor extend the time within which a petition for judicial review of such rule or action under this section may be filed, and shall not postpone the effectiveness of such rule or action.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement. Where a final decision by the Administrator defers performance of any nondiscretionary statutory action to a later time, any person may challenge the deferral pursuant to paragraph (1).

(c) Additional evidence

In any judicial proceeding in which review is sought of a determination under this chapter required to be made on the record after notice and opportunity for hearing, if any party applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as to[1] the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new findings, and his recommendation, if any,

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[1] So in original. The word "to" probably should not appear.

for the modification or setting aside of his original determination, with the return of such additional evidence.

(d) Rulemaking

(1) This subsection applies to—

(A) the promulgation or revision of any national ambient air quality standard under section 7409 of this title,

(B) the promulgation or revision of an implementation plan by the Administrator under section 7410(c) of this title,

(C) the promulgation or revision of any standard of performance under section 7411 of this title, or emission standard or limitation under section 7412(d) of this title, or any regulation under section 7412(f) of this title, any standard under section 7412(g)(1)(D) and (F) of this title, or any regulation under section 7412(m) or (n) of this title,

(D) the promulgation of any requirement for solid waste combustion under section 7429 of this title,

(E) the promulgation or revision of any regulation pertaining to any fuel or fuel additive under section 7545 of this title,

(F) the promulgation or revision of any aircraft emission standard under section 7571 of this title,

(G) the promulgation or revision of any regulation under subchapter IV of this chapter (relating to control of acid deposition),

(H) promulgation or revision of regulations pertaining to primary nonferrous smelter orders under section 7419 of this title (but not including the granting or denying of any such order),

(I) promulgation or revision of regulations under subchapter V of this chapter (relating to stratosphere and ozone protection),

(J) promulgation or revision of regulations under part C of subchapter I of this chapter (relating to prevention of significant deterioration of air quality and protection of visibility),

(K) promulgation or revision of regulations under section 7521 of this title and test procedures for new motor vehicles or

engines under section 7525 of this title and the revision of a standard under section 7521(a)(3) of this title,

(L) promulgation or revision of regulations for noncompliance penalties under section 7420 of this title,

(M) promulgation or revision of any regulations promulgated under section 7541 of this title (relating to warranties and compliance by vehicles in actual use),

(N) action of the Administrator under section 7426 of this title (relating to interstate pollution abatement),

(O) the promulgation or revision of any regulation pertaining to consumer and commercial products under section 7511b(e) of this title,

(P) the promulgation or revision of any regulation pertaining to field citations under section 7413(d)(3) of this title,

(Q) the promulgation or revision of any regulation pertaining to urban buses or the clean-fuel vehicle, clean-fuel fleet, and clean fuel programs under part C of subchapter II of this chapter,

(R) the promulgation or revision of any regulation pertaining to nonroad engines or nonroad vehicles under section 7547 of this title,

(S) the promulgation or revision of any regulation relating to motor vehicle compliance program fees under section 7552 of this title,

(T) the promulgation or revision of any regulation under subchapter IV of this chapter (relating to acid deposition),

(U) the promulgation or revision of any regulation under section 7511b(f) of this title pertaining to marine vessels, and

(V) such other actions as the Administrator may determine.

The provisions of section 553 through 557 and section 706 of Title 5 shall not, except as expressly provided in this subsection, apply to actions to which this subsection applies. This subsection shall not apply in the case of any rule or circumstance referred to in subparagraphs (A) or (B) of subsection 553(b) of Title 5.

(2) Not later than the date of proposal of any action to which this subsection applies, the Administrator shall establish a rulemaking docket for such action (hereinafter in this subsection referred to as a "rule"). Whenever a rule applies only within a particular State, a second (identical) docket shall be simultaneously established in the appropriate regional office of the Environmental Protection Agency.

(3) In the case of any rule to which this subsection applies, notice of proposed rulemaking shall be published in the Federal Register, as provided under section 553(b) of Title 5, shall be accompanied by a statement of its basis and purpose and shall specify the period available for public comment (hereinafter referred to as the "comment period"). The notice of proposed rulemaking shall also state the docket number, the location or locations of the docket, and the times it will be open to public inspection. The statement of basis and purpose shall include a summary of—

(A) the factual data on which the proposed rule is based;

(B) the methodology used in obtaining the date and in analyzing the date; and

(C) the major legal interpretations and policy considerations underlying the proposed rule.

The statement shall also set forth or summarize and provide a reference to any pertinent findings, recommendations, and comments by the Scientific Review Committee established under section 7409(d) of this title and the National Academy of Sciences, and, if the proposal differs in any important respect from any of these recommendations, an explanation of the reasons for such differences. All data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule.

(4) (A) The rulemaking docket required under paragraph (2) shall be open for inspection by the public at reasonable times specified in the notice of proposed rulemaking. Any person may copy documents contained in the docket. The Administrator shall provide copying facilities which may be used at the expense of the

person seeking copies, but the Administrator may waive or reduce such expenses in such instances as the public interest requires. Any person may request copies by mail if the person pays the expenses, including personnel costs to do the copying.

(B)(i) Promptly upon receipt by the agency, all written comments and documentary information on the proposed rule received from any person for inclusion in the docket during the comment period shall be placed in the docket. The transcript of public hearings, if any, on the proposed rule shall also be included in the docket promptly upon receipt from the person who transcribed such hearings. All documents which become available after the proposed rule has been published and which the Administrator determines are of central relevance to the rulemaking shall be placed in the docket as soon as possible after their availability.

(ii) The drafts of proposed rules submitted by the Administrator to the Office of Management and Budget for any interagency review process prior to proposal of any such rule, all documents accompanying such drafts, and all written comments thereon by other agencies and all written responses to such written comments by the Administrator shall be placed in the docket no later than the date of proposal of the rule. The drafts of the final rule submitted for such review process prior to promulgation and all such written comments thereon, all documents accompanying such drafts, and written responses thereto shall be placed in the docket no later than the date of promulgation.

(5) In promulgating a rule to which this subsection applies (i) the Administrator shall allow any person to submit written comments, data, or documentary information; (ii) the Administrator shall give interested persons an opportunity for the oral presentation of data, views, or arguments, in addition to an opportunity to make written submissions; (iii) a transcript shall be kept of any oral presentation; and (iv) the Administrator shall keep the record of such proceeding open for thirty days after completion of the

proceeding to provide an opportunity for submission of rebuttal and supplementary information.

(6) (A) The promulgated rule shall be accompanied by (i) a statement of basis and purpose like that referred to in paragraph (3) with respect to a proposed rule and (ii) an explanation of the reasons for any major changes in the promulgated rule from the proposed rule.

(B) The promulgated rule shall also be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period.

(C) The promulgated rule may not be based (in part or whole) on any information or data which has not been placed in the docket as of the date of such promulgation.

(7) (A) The record for judicial review shall consist exclusively of the material referred to in paragraph (3), clause (i) of paragraph (4)(B), and subparagraphs (A) and (B) of paragraph (6).

(B) Only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed. If the Administrator refuses to convene such a proceeding, such person may seek review of such refusal in the United States court of appeals for the appropriate circuit (as provided in subsection (b) of this section). Such reconsideration shall not postpone the effectiveness of the rule. The effectiveness of the rule may be stayed during such reconsideration,

however, by the Administrator or the court for a period not to exceed three months.

(8) The sole forum for challenging procedural determinations made by the Administrator under this subsection shall be in the United States court of appeals for the appropriate circuit (as provided in subsection (b) of this section) at the time of the substantive review of the rule. No interlocutory appeals shall be permitted with respect to such procedural determinations. In reviewing alleged procedural errors, the court may invalidate the rule only if the errors were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.

(9) In the case of review of any action of the Administrator to which this subsection applies, the court may reverse any such action found to be—

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; or

(D) without observance of procedure required by law, if (i) such failure to observe such procedure is arbitrary or capricious, (ii) the requirement of paragraph (7)(B) has been met, and (iii) the condition of the last sentence of paragraph (8) is met.

(10) Each statutory deadline for promulgation of rules to which this subsection applies which requires promulgation less than six months after date of proposal may be extended to not more than six months after date of proposal by the Administrator upon a determination that such extension is necessary to afford the public, and the agency, adequate opportunity to carry out the purposes of this subsection.

(11) The requirements of this subsection shall take effect with respect to any rule the proposal of which occurs after ninety days after August 7, 1977.

(e) Other methods of judicial review not authorized

Nothing in this chapter shall be construed to authorized judicial review of regulations or orders of the Administrator under this chapter, except as provided in this section.

(f) Costs

In any judicial proceeding under this section, the court may award costs of litigation (including reasonable attorney and expert witness fees) whenever it determines that such award is appropriate.

(g) Stay, injunction, or similar relief in proceedings relating to noncompliance penalties

In any action respecting the promulgation of regulations under section 7420 of this title or the administration or enforcement of section 7420 of this title no court shall grant any stay, injunctive, or similar relief before final judgment by such court in such action.

(h) Public participation

It is the intent of Congress that, consistent with the policy of the Administrative Procedures Act, the Administrator in promulgating any regulation under this chapter, including a regulation subject to a deadline, shall ensure a reasonable period for public participation of at least 30 days, except as otherwise expressly provided in section[2] 7407(d), 7502(a), 7511(a) and (b), and 7512(a) and (b) of this title. (July 14, 1955, ch. 360, Title III § 307, as added Dec. 31, 1970, Pub.L. 91-604, § 12(a), 84 Stat. 1707, and amended Nov. 18, 1971, Pub.L. 92-157, title III, § 302(a), 85 Stat. 464; June 22, 1974, Pub.L. 93-319, § 6(c), 88 Stat. 259; Aug. 7, 1977, Pub.L. 95-95, title III, §§ 303(d), 305(a), (c), (f)-(h), 91 Stat. 772, 776, 777; Nov. 16, 1977, Pub.L. 95-190, § 14(a)(79), (80), 91 Stat. 1404; Nov. 15, 1990, Pub.L. 101-549, title I, §§ 108(p),

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[2] The word "section" probably should read sections.

110(5), title III § 302(g), (h), title VII §§ 702(c), 703, 706, 707(h), 710(b), 104 Stat. 2469, 2470, 2574, 2681, 2682, 2683, 2684.)

References in Text

Section 1857c-10(c)(2)(A), (B), or (C) of this title (as in effect before August 7, 1977), referred to subsec. (b)(1), was in the original "section 119(c)(2)(A), (B), or (C) (as in effect before date of enactment of the Clean Air Act Amendments of 1977.

PB 80-220320
EPA Docket A-79-40, II-A-5
Protecting Visibility:
An EPA Report to Congress
(U.S.) Environmental Protection Agency
Research Triangle Park, NC Office of Air
Quality Planning and Standards
October, 1979

U.S. Department of Commerce
National Technical Information Service
NTIS.

3.2 MEASUREMENT METHODS

Regardless of the specific monitoring application, there are four components useful in charaterizing (*sic*) visibility impairment and providing information that may link visual effects to their sources: human observations and measurements of optical, meteorological and pollutant parameters.

3.2.1 Human Observations

Since visibility is an interpretation of what is perceived by the human eye, it is essential that any monitoring effort be relatable to human observations. Human eye observation is the sole source of long-term visibility (visual range) data. Unfortunately, human eye observations depend not only on illumination, target characteristics, and air quality, but also include the effects of varying visual perception and subjective judgment. Nevertheless, with the development of observer-based visibility indices (Craik, 1979) and an adequate training program, human observations can provide useful information about visibility and can complement instrumental measurements.

The Federal Land Managers of parks and wilderness areas represent an important resource for human observation of visibility in class I areas. Although the traditional observation for visibility has been "visual range," i.e., the farthest point that can be seen, the U. S. Forest Service has incorporated more elaborate visual judgments into their Landscape Management System (USFS, 1973). The visual elements of a vista are described in terms of "form, line,

color, and texture." These elements represent subjective discriptions (*sic*) of contrast, the basic optical parameter. Meaningful judgments made by a trained observer about the contast (*sic*) and coloration of a vista and about the presence of plume blight can be invaluable in assessing visibility impairment.

3.2.2. Optical Measurements

In order to quantify scenic contrast as perceived by the eye, optical measurements must be made. The visual air quality along the optical path must also be measured in order to determine the effect of atmospheric contaminants on the perceived scene.

A number of optical devices are available or under development that measure some property of visibility. The most obvious optical device is the standard photographic camera. Visibility monitoring should always include photography in some form, at least for documentation of existing good visibility conditions or impairment problems. The two general film formats are: negatives (from which prints may easily be made) and reversal film ("slides"). Both slides and negatives produce about equal color rendition. Prints made from negatives, however, are subject to quality control uncertainty during the additional laboratory printing process and are one more generation removed from the original image. Slides are more cumbersome to use but normally are more economical and more visually accurate than prints.

The chief use of photographs or slides is in preserving a scene in a form similar to the view as originally perceived. A secondary use is photogrammetry, the measurement of the density of color of individual sections of the picture to determine quantitative contrast values of different elements of the scene. The accuracy of this process, however, is sensitive to variations in film density and exposure and requires a densitometer closely matched to the response curve of the particular film being used.

Photometers measure light intensity and range in complexity from the photographer's light meter to a television camera. The principle of operation for each instrument is the same and is somewhat analogous to the human eye. The heart of a photometer

is the photodetector, which converts brightness into representative electric signals. By the use of combinations of lenses and filters, different optical properties, such as color, may be determined.

Photometers designed specifically to measure properties of atmospheric visibility over an optical path to a target are telephotometers, so named because they resolve visibility detail at a distance. Telephotometers provide an output proportional to the absolute brightness of a target within the optical field of view. The human sensation of seeing, is however, produced not by absolute brightness levels of light, but by *contrast* in brightness or color between two objects. Therefore, the most practical application of a telephotometer is as a contrast measuring device—comparing the brightness of color of an object to a background. The visibility of a target can be quantified in terms of its contrast at a given distance from the observer and is dependent upon the inherent contrast of the target, uniformity of the atmosphere along the sight path, angle of observation, and illumination of the sight path. A disadvantage of using telephotometers is that it is difficult to separate the different effects from each other. This disadvantage is important if the goal is to isolate the contribution of anthropogenic air quality on visibility.

A *transmissometer* may be used to measure the optical characteristics over a given path. This instrument is comparable to an application of a telephotometer in which a known light source becomes the target. Transmission instruments measure the amount of light transmitted from a specified source to a receiver, allowing the direct calculation of the average extinction coefficient of the air along the instrument path. The light lost along the path is either scattered out of the path or absorbed by gas molecules and aerosol in the path. The path for transmission instruments is long compared to the small volume measured by scattering instruments and short compared with the 20 to 100 km paths used by telephotometers.

Transmissometers use artificial light sources; either the receiver or reflectors must be placed at one end of a base line and the transmitter at the other end. This fixed base line does not allow

flexibility to measure visibility-related variables in different directions. When transmissometers are used in very clean atmospheres, such as class I areas in the Southwest, their critical sensitivity to atmospheric turbulence can introduce error. Additionally, these instruments are usually limited to a single wavelength and not very portable.

Scattering instruments are used to measure a basic optical property of the air sample: the volume scattering function. The measurement is independent of target properties, natural illumination of the atmosphere, and distance between the observer and the target. Scattering instruments include integrating nephelometers, back-scatter meters, forward-scatter meters, and polar nephelometers.

Integrating nephelometers perform a point measurement of the light scattered over a range of angles and permit determination of the scattering component of extinction, b_{scat}. Since the contribution of air itself to b_{scat} is known, the b_{scat} measurement permits determination of light scattering by particles. In clean areas where light scattering dominates extinction, b_{scat} approximates the extinction coefficient, b_{ext}. Because b_{scat} is measured at a point, it can be directly related to simultaneous point measurements of aerosol properties. The air sampled by the integrating nephelometer is enclosed and illuminated indirectly by an artificial light source, allowing automated continuous day and night operation. Enclosed instruments also allow control of ambient air conditions; such control permits study of the influence of relative humidity. Nephelometers have been used in a variety of applications, including to a limited extent, applications in class I areas (Charlson et al., 1978). Models differing in wavelength response and sensitivity are available. Since nephelometers involve point measurements, care must be taken to minimize the influence from local sources, such as automobiles or cigarette smoke. Unless nephelometers are physically moved through a plume, inhomogeneous impairment, such as plume blight, cannot be detected. Nephelometers can not be used to measure absorption and cannot detect discoloration caused by NO_x.

USER'S MANUAL FOR THE PLUME VISIBILITY MODEL (PLUVUE)
NOVEMBER 1980
U. S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR, NOISE AND RADIATION
OFFICE OF AIR QUALITY PLANNING AND STANDARDS
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27711

The effect of plume $SO_2$and NO_2 concentrations on the steady-state OH concentration and hence on sulfate formation is also shown in figure 5. Note, by comparing figure 5(a) with 5(b), that sulfate formation is much more rapid when plume parcels are more dilute (at farther downwind distances). In the dilute, neutral-stability plumes at downwind distances greater than 100 km, sulfate formation rates reach noon peaks of about 0.06, 0.02, and 0.004 percent per hour, respectively, for the summer, fall, and winter simulations for this latitude. In the less dilute, neutral-stability plumes at downwind distances of less than 100 km, the sulfate formation rates peak at 0.016, 0.008, and less than 0.002 percent per hour for summer, fall, and winter, respectively. However, formation rates in stable plumes are considerably less than 0.01 percent per hour even at noon on a summer day.

These model calculations support the argument made by Latimer (1980) that the atmospheric discoloration of stable power plant plumes (where particulate emissions are controlled) is caused primarily by nitrogen dioxide (NO_2) gas, not by secondary sulfate aerosol. Sulfate aerosol is not formed in plumes during nighttime transport, and formation is minimal during daytime transport when plumes are concentrated (as they would be during stable conditions). After plumes have become well mixed, significant rates of sulfate formation can occur in the daytime, though these rates approach

zero with low sun angles. Thus, sulfate formation is a long range (greater than 100 km), multiday phenomenon, not a near-source problem.